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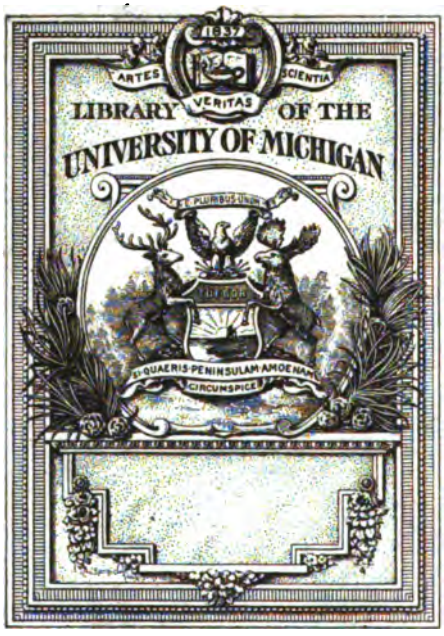
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WESTERN RESERVE UNIVERSITY
BULLETINS.

New Series.

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Western Reserve University

CATALOGUE

1897-98.

CLEVELAND, OHIO.
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CATALOGUE

1897-98.

CLEVELAND, OHIO.

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1898.

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Western Reserve University.

STATEMENT.

WESTERN RESERVE UNIVERSITY embraces six departments.

1. **Adelbert College**—formerly the Western Reserve College at Hudson—founded in 1826, removed to Cleveland in 1882.

2. **The College for Women**—announced in the Spring of 1888, and opened in September of the same year; in 1892 provided with buildings adapted to its work.

3. **The Department of Graduate Instruction**—established in 1892 by the Faculty of Adelbert College and the College for Women, designed to offer to college graduates courses leading to the degrees of A. M. and Ph. D.

4. **The Medical College**—formerly known as the Cleveland Medical College—founded in 1844, and offering a course of four years.

5. **The Franklin T. Backus Law School**—opened in 1892, designed through a course of study covering three years to give an adequate training for the practice of the law.

6. **The Dental Department**—opened in 1892, designed to teach the art of dentistry as a department of medicine.

Popular and educational lectures are included in the plans of the University.

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Adelbert College.

CALENDAR.

1897.		
21-22 Sept.	Tuesday-Wednesday	Examinations for Admission.
23 Sept.	Thursday	First Term begins.
25 Nov.	Thursday	Thanksgiving Day.
23 Dec.	Thursday	Winter Recess begins.
1898.		
3 Jan.	Monday	Winter Recess ends.
27 Jan.	Thursday	Day of Prayer for Colleges.
28 Jan.	Friday	Examinations begin.
5 Feb.	Saturday	First Term ends.
7 Feb.	Monday	Second Term begins.
7-13 April	Thursday-Wednesday	Easter Recess.
10 June	Friday	General Examinations begin.
19 June	Sunday	Baccalaureate Sermon.
21 June	Tuesday	Meeting of Alumni.
21 June	Tuesday	Prize Oratorical Contest.
22 June	Wednesday	COMMENCEMENT.
23-24 June	Thursday-Friday	Examinations for Admission.

SUMMER VACATION OF THIRTEEN WEEKS.

20-21 Sept.	Tuesday-Wednesday	Examinations for Admission.
20 Sept.	Tuesday	First Term begins.
24 Nov.	Thursday	Thanksgiving Day.
22 Dec.	Thursday	Winter Recess begins.

HISTORICAL STATEMENT.

IN 1801 THE GENERAL ASSEMBLY of the Territory of the United States Northwest of the river Ohio was petitioned by residents of the Connecticut Western Reserve to grant a charter for a college to be situated within the limits of the Reserve. The petition was denied. In 1803 the first General Assembly of the State of Ohio, on the sixteenth of April, incorporated the Erie Literary Society, which was composed of a number of proprietors of land within the county of Trumbull (then comprising the entire Reserve), desirous to appropriate a part thereof to found a seminary of learning within that County. Under this charter an Academy was established at Burton in 1805, the first institution of this kind in Northern Ohio. This school, with the exception of the years 1810–1819, continued to operate until 1834. In 1817 the Presbytery of Grand River, which embraced nearly all the Presbyterian and Congregational ministers and churches of the Reserve, formed itself into a society "for the education of indigent, pious young men for the ministry, within the limits of the Presbytery." The students aided by this society studied privately with clergymen until the opening of the Academy at Burton, when they pursued their studies at that school. In 1818 the Presbytery of Portage formed a similar society. In 1822 the two Presbyteries appointed a committee to confer together for the purpose of devising "ways and means for establishing on the Connecticut Western Reserve a Literary and Theological Institution." The report of the committee, which was adopted by the Presbyteries, provided for the establishment, under certain conditions, of a Theological Institution on the foundation of the Erie Literary Society at Burton. The Trustees of

the Erie Literary Society accepted the conditions. A Board of Managers of the Education Fund was then appointed by the Presbyteries.

The connection between the Board of Managers and the Trustees of the Erie Literary Society lasted until June, 1824. During the year 1823 the managers became convinced that such an institution as they desired could not be built up at Burton, and consequently they requested the Trustees of the Erie Literary Society to move their establishment to a more eligible situation. As the society held property on condition that the school should be in Burton, they declined this proposition. In June, 1824, at a joint session of the Board of Managers with special commissioners of the Presbyteries, it was decided to discontinue the connection with the Erie Literary Society and to found a separate Institution. In January a special Board of Commissioners, representing the Presbyteries, to which the Presbytery of Huron was now added, selected Hudson as the site of the College. The Board of Managers, with four additional members, representing the Huron Presbytery, now became the Board of Trustees, and held their first meeting in Hudson, February 15, 1825. They drafted a charter and drew up plans for the grounds. The charter was granted February 7, 1826, and on April 26th the corner-stone of the first building was laid. The first students were received in December, 1826, and were instructed at Tallmadge by Mr. Coe, the principal of the Academy at that place, who was appointed tutor *pro tempore*. In 1827 the new building at Hudson was occupied and the preparatory department established. A Theological Department was opened in 1830 and maintained until 1852.*

*This sketch of the foundation of the College is derived from "A History of Western Reserve College, 1826-1876, by Rev. Carroll Cutler, D. D., President. Cleveland, 1876."

In 1878 the question of the removal of the college from Hudson to Cleveland was raised, and a committee of the Trustees was appointed to take it under consideration.

From the time of its foundation to the year 1876 the college had received in gifts some three hundred and seventy-five thousand dollars, two hundred thousand of which had been given for current expenses. The remainder constituted its endowment in 1876, and included the funds used in establishing the Handy, Hurlbut, Oviatt and Perkins Professorships.

In March, 1880, through one of the Board of trustees, Mr. Amasa Stone, of Cleveland, proposed to give the College five hundred thousand dollars, provided it would remove to Cleveland, occupy some suitable site to be donated by the citizens of Cleveland, and change its name to "Adelbert College of Western Reserve University." The new name was to be a memorial to Mr. Stone's only son, Adelbert Stone, who was drowned while a student at Yale. Mr. Stone proposed further, that, of the sum of money offered by him, one hundred and fifty thousand dollars should be expended in buildings, and the remainder added to the permanent endowment of the College.

On September 20th of the same year the Trustees voted to accept the proposition and to remove the College when the conditions were fulfilled. March 19, 1881, the trustees voted that the conditions had been complied with and that the removal should be made.

In accordance with this decision the College was removed to Cleveland in September, 1882. Two buildings were erected, one containing rooms for the work of instruction, with chapel, library and museum; the other containing apartments for sixty students. In 1883 the sum of one hundred thousand dollars was added to the funds of the College by the will of Mr. Stone.

In 1888 a Gymnasium was built and equipped.

The same year a gift of $50,000 was received to found the Haydn Professorship.

In 1894, a building to be used as a Physical Laboratory was built and furnished by Mr. Samuel Mather.

In 1895 the Hatch Library, the gift of Mr. Henry R. Hatch, was erected and furnished.

In the summer of 1897 Eldred Hall, a building for the use of the College Young Men's Christian Association was erected, mainly through the gift of the late Henry B. Eldred.

By the will of Daniel Fayerweather of New York City, the College has received an additional endowment of $150,000.

The buildings are located on a campus of twenty-two acres. This campus is in the midst of the great park system of Cleveland of some eleven hundred acres. The College has thus the advantage of both a rural and an urban location.

Western Reserve Academy occupies the buildings and grounds formerly occupied by the College at Hudson.

FACULTY AND INSTRUCTORS.

Arranged with the exception of the President, in the order of college graduation.

CHARLES FRANKLIN THWING, D. D., LL. D., *President*, 55 Bellflower Av.

A. B., Harvard Coll., 1876; Andover Theological Seminary, 1876-79; D. D., Chicago Theological Seminary, 1888; LL. D., Illinois Coll. and Marietta Coll., 1894; President Adelbert Coll. and Western Reserve Univ., 1890—

LEMUEL STOUGHTON POTWIN, D. D.,

Professor of the English Language and Literature.

(Absent for the year.)

A. B., Yale Coll., 1854; Tutor in Yale, 1858-60; D. D., Yale, 1886; Professor of Latin, Western Reserve Coll. and Adelbert Coll., 1871-92; Professor of English, 1892—

EDWARD WILLIAMS MORLEY, PH. D., LL. D., 7 The Langton.

Hurlbut Professor of Natural History and Chemistry.

A. B., Williams Coll., 1860; Professor of Chemistry, Western Reserve Coll. and Adelbert Coll., 1869—

CHARLES JOSIAH SMITH, A. M., 35 Adelbert St.

Professor of Mathematics.

A. B., Western Reserve Coll., 1870; A. M., 1873; Professor of Mathematics and Perkins Professor of Natural Philosophy and Astronomy, Western Reserve Coll., 1870-82; Professor of Mathematics, Adelbert Coll., 1882—

FRANK PERKINS WHITMAN, A. M., 79 Adelbert St.

Perkins Professor of Physics and Astronomy.

A. B., Brown Univ., 1874; A. M., 1877; Brown Univ., 1879; Johns Hopkins Univ., 1879-80; Professor of Physics, Rensselaer Polytechnic Inst., 1880-85; Professor of Physics, Adelbert Coll., 1885—

ALBERT BARNES CRISTY, A. M., B. D., 45 Anndale St.

Instructor in Elocution.

A. B., Coll. of the City of New York, 1875; A. M., 1887; B. D. Andover Theological Seminary, 1879; Instructor in Elocution, Adelbert Coll., 1895—

CHARLES HARRIS, PH. D., 21 Cutler St.

Professor of German.

A. B., Indiana Univ., 1879; Ph. D., Univ. of Leipzig, 1883; Instructor in German, Academic Department of Vincennes Univ., 1883-86; Professor of French and German, Southern Illinois State Normal School, 1886-88; Professor of German, Oberlin Coll., 1888-93; Professor of German, Adelbert Coll., 1893—

STEPHEN FRANCIS WESTON, A. M., 102 Adelbert St.

Associate Professor of Political and Social Science.

A. B., Antioch Coll., 1879; A. M., 1885; Univ. of Mich., 1885–87; School of Political Science, Columbia Coll., 1890–92; Assistant in Economics, Columbia Coll., 1892–94; Associate Professor of Political and Social Science, Adelbert Coll., 1894—

MATTOON MONROE CURTIS, PH. D., 43 Adelbert St.

Handy Professor of Philosophy.

A. B., Hamilton Coll., 1880; B. D., Union Theological Seminary, 1883; A. M., Hamilton Coll., 1883; Pastor at Hastings-on-Hudson and at Cleveland, 1883–88; University of Leipzig, 1888–91; Ph. D., 1890; Professor of Philosophy, Adelbert Coll., 1891—

FREDERICK MORRIS WARREN, PH. D., *Secretary of the Faculty,*

Professor of Romance Languages. 6 Hayward St.

A. B., Amherst Coll., 1880; Instructor in Modern Languages, Western Reserve Coll. and Adelbert Coll., 1881–83; Sorbonne, 1884–86; Instructor and Associate in Modern Languages, Johns Hopkins Univ., 1886–91; Ph. D., Johns Hopkins Univ., 1887; Professor of Romance Languages, Adelbert Coll., 1891—

FRANCIS HOBART HERRICK, PH. D., D. SC., 7 Cutler St.

Professor of Biology and Curator of the Zoological Collection.

A. B., Dartmouth Coll., 1881; Ph. D., Johns Hopkins Univ., 1888; D. Sc., Western Univ. of Pennsylvania, 1897; Instructor in Biology, Adelbert Coll., 1888–91; Professor of Biology, 1891—

HENRY PLATT CUSHING, M. S., 260 Sibley St.

Professor of Geology.

Ph. B., Cornell Univ., 1882; Cornell Univ., 1882–83; School of Mines, Columbia Coll., 1883–84; Cornell Univ., 1884–85; M. S., 1885; Instructor in Geology, Chemistry and Physics, State Normal School, Mankato, Minn., 1885–91; Univ. of Munich, 1891–92; Instructor in Geology and Chemistry, Adelbert Coll., 1892–93; Associate Professor of Geology, 1893–95; Professor of Geology, 1895—

OLIVER FARRAR EMERSON, PH. D., 50 Wilbur Pl.

Oviatt Professor of Rhetoric and English Philology.

A. B., Iowa Coll., 1882; A. M., 1885; Superintendent of Schools, Grinnell, Ia., 1882–84; Muscatine, Ia., 1884–85; Principal of the Academy of Iowa Coll., 1884–88; Goldwin Smith Fellow in English, Cornell Univ., 1888–89; Instructor in English, Cornell Univ., 1889–91; Ph. D., 1891; Assistant Professor of Rhetoric and English Philology, 1892–96; Professor of Rhetoric and English Philology, Adelbert Coll., 1896—

EUGENE DAVID HOLMES, A. M., 102 Adelbert St.

Instructor in English.

A. B., Illinois Coll., 1883; A. M., 1886; Principal and Instructor in History, Minneapolis Academy, 1887–93; Master in English, Belmont School, Belmont, Cal., 1893–94; Principal and Instructor in English, High School, Winona, Minn., 1894–95; University of Chicago, 1894–95; Assistant in English, Adelbert Coll., 1895–97; Instructor in English, 1897—

SAMUEL BALL PLATNER, PH. D.,

Professor of Latin and Instructor in Sanskrit.

(Absent for the year.)

A. B., Yale Coll., 1883; Ph. D., 1885; Instructor in Latin and French, Adelbert Coll., 1885–90; Absent on leave, 1889–90; Assistant Professor of Latin, Adelbert Coll., 1890–92; Professor of Latin, 1892—

ABRAHAM LINCOLN FULLER, PH. D., *Dean of the Faculty*, 45 Wilbur Pl.

Professor of Greek.

A. B., Dartmouth Coll., 1885; A. M., 1888; Univ. of Leipzig, 1885–87; Univ. of Erlangen, 1887–88; Ph. D., 1888; Instructor in Latin and French, Adelbert Coll., 1888–90; Professor of Greek, College for Women, 1890–98; Professor of Greek, Adelbert Coll., 1898—

VERNON JUDSON EMERY, A. M., 8 A. H.

Instructor in Latin.

A. B., Ohio State Univ., 1887; Instructor in Latin, Univ. of Nebraska, 1888–91; A. M., Univ. of Nebraska, 1890; Univ. of Berlin, 1891–92; Assistant in Latin, Ohio State Univ., 1892–93; Assistant in Latin, Univ. of Chicago, 1893–94; Instructor in Latin, Adelbert Coll., 1894—

EDWIN VERNON MORGAN, A. M., 14 A. H.

Instructor in History (on the Haydn Foundation).

A. B., Harvard Coll., 1890; A. M., 1891; Universities of Berlin and Oxford, 1891–92; Assistant in History and Proctor, Harvard Coll., 1892–94; Univ. of Berlin, 1894–95; Instructor in History, Adelbert Coll., 1895—

ROBERT MACDOUGALL, PH. D., 102 Adelbert St.

Associate Professor of Pedagogy.

A. B., McGill Univ., 1890; Harvard Univ., 1892–95; A. M., 1893; Morgan Fellow, 1894; Ph. D., 1895; Walker Fellow, 1895–96; Univ. of Berlin and Sorbonne, 1895–96; Instructor in Philosophy, Adelbert Coll., 1896–97; Associate Professor of Pedagogy, Adelbert Coll., 1897—

HARRY WILMOT WOODWARD, A. M., 102 Adelbert St.

Instructor in Physics.

A. B., Adelbert Coll., 1890; A. M., 1895; Case School of Applied Science, 1894–96; Assistant in Physical Laboratory, Adelbert Coll., 1894–97; Instructor in Physics, 1897—

JOHN DICKERMAN, A. B., 852 Doan St.

Instructor in Mathematics.

A. B., Adelbert Coll., 1891; Instructor in Mathematics, Western Reserve Academy, 1891–94; Johns Hopkins University, 1894–95; Chamberlin Observatory, Denver University, 1895–96; University of Chicago, 1896–97; Instructor in Mathematics, Adelbert Coll., 1897—

HIPPOLYTE GRUENER, PH. D., 6 A. H.

Instructor in Chemistry.

A. B., Yale Coll., 1891; Ph. D., 1893; Instructor in Chemistry and Physics, Hill School, Pottstown, Pa., 1893-94; Univ. of Munich, 1894-95; Instructor in Chemistry, Adelbert Coll., 1895—

EDWARD MEYER, PH. D., 844 Logan Av.

Instructor in German.

B. L., Adelbert Coll., 1893; Univ. of Leipzig, 1893-94; Univ. of Heidelberg, 1894-96; Ph. D., 1896; Instructor in German, Adelbert Coll., 1896—

ARTHUR HULL MABLEY, A. M., 45 Oakdale Av.

Instructor in Latin.

A. B., Adelbert Coll., 1894; Graduate School, Western Reserve Univ., 1894-95; A. M., 1895; Harvard Univ., 1895-96; A. M., 1896; Instructor in Latin, High School, Akron, 1897; Instructor in Latin, Adelbert Coll., 1897—

EDWARD CHRISTOPHER WILLIAMS, B. L., (Adelbert), 61 Grant St.
Librarian.

CAROLINE ELMINA WATERS, Ph. B., (W. R. U.), 822 Doan St.
Assistant in Library.

EMERSON OPDYCKE STEVENS, A. M., (Adelbert),
Assistant in English. Cor. Dover and Delmar Avs.

HERBERT TETLOW, M. L., (Dartmouth), 12 A. H.
Assistant in Biology.

CARL B. JAMES, B. S., (Baldwin University), 54 Bigelow St.
Assistant in Biological Laboratory.

CHARLES GREGORY LANG, M. D., (W. R. U.), 35 Huntington St.
Director of the Gymnasium.

WILLIAM JACKSON TRUESDALE, A. B. (O. W. U.), 257 Kennard St.
Assistant in Economics.

Additional instruction in their own departments is given by the following members of the Faculty of the College for Women:

HAROLD NORTH FOWLER, PH. D., 19 Cutler St.

Professor of Greek.

A. B., Harvard Coll., 1880; Classical Master in Marston's University School, Baltimore, 1880–82; Johns Hopkins Univ., 1880–81; American School of Classical Studies in Athens, 1882–83; Univ. of Berlin, 1883–84; Univ. of Bonn, 1884–85; Ph. D., 1885; Instructor in Greek, Latin and Archæology, Harvard Coll., 1885–88; Instructor in Latin, Phillips Exeter Acad., 1888–90; Professor of Latin, Phillips Exeter Acad., 1890–92; Professor of Greek, Univ. of Texas, 1892–93; Professor of Greek, College for Women, 1893—

HENRY ELDRIDGE BOURNE, A. B., B. D., 27 Cutler St.

Professor of History.

A. B., Yale Coll., 1883; Principal High School, Thomaston, Ct., 1883–84; B. D., Yale Divinity School, 1887; Hooker Fellow, Yale Divinity School, 1887–88; Teacher of History and Psychology, Norwich (Ct.) Free Acad., 1889–92; Professor of History and Instructor in Philosophy, College for Women, 1892–93; Professor of History, 1893—

ROBERT WALLER DEERING, PH. D., 80 Cornell St.

Professor of Germanic Languages and Literature.

Centre Coll., 1879–80; Vanderbilt Univ., 1880–85; A. M., 1885; Instructor in German, Vanderbilt Univ., 1885–86; Univ. of Leipzig, 1886–89; Ph. D., 1889; Adjunct Professor of Germanic Languages and Literature, Vanderbilt Univ., 1889–92; Professor of Germanic Languages and Literature, College for Women, 1892—

WILLIAM HENRY HULME, PH. D., 95 Cornell St.

Associate Professor of English.

A. B., Vanderbilt Univ., 1890; Assistant in Greek, 1889–90; Univ. of Leipzig, 1891–92; Univ. of Jena, 1892–93; Univ. of Freiburg, 1893–94; Ph. D., 1894; Instructor in German, College for Women, 1894–96; Associate Professor of English, 1896—

VISITING COMMITTEE OF THE ALUMNI.

HERBERT W. BILL, 1869.

GEORGE C. FORD, 1884.

HENRY C. BEARDSLEE, 1889.

STANDING COMMITTEES OF THE FACULTY.

I. COMMITTEE ON ADMISSION:

PROFESSORS FULLER*, HARRIS, SMITH.

II. EXECUTIVE COMMITTEE:

(*Having oversight of the classroom work and academic status of the students:*)

PROFESSORS FULLER*, HARRIS, SMITH.

III. COMMITTEE ON PROGRAM OF RECITATIONS AND LECTURES:

PROFESSORS CUSHING*, WARREN, WHITMAN.

IV. COMMITTEE ON CATALOGUE:

PROFESSORS EMERY, FULLER, SMITH, WARREN*.

V. COMMITTEE ON ATHLETICS AND GYMNASIUM:

PROFESSORS CUSHING*, HERRICK, WHITMAN.

VI. COMMITTEE ON CURICULUM:

PROFESSORS FULLER*, SMITH, WHITMAN.

VII. LIBRARY COMMITTEE:

PROFESSORS BOURNE, CURTIS, PLATNER, WARREN, WHITMAN*.

*Chairman.

STUDENTS.

SENIOR CLASS.

Henry Raymond Brush, Cl.	*Herkimer, N. Y.*	23 A. H.
Allen Harmon Carpenter, Cl.	*Cleveland*	227 Princeton St.
Arthur Lee Clermont, L. S.	*Cleveland*	41 Walker St.
Addison Bertram Clifford, Cl.	*Wadsworth*	Δ Υ House.
George Chapman Dissette, Cl.	*Glenville*	Β Θ Π House.
Henry Edgerton Freeman, L. S.	*Cuyahoga Falls*	Β Θ Π House.
William Edward Gunn, L. S.	*Cleveland*	785 Superior St.
Harry Albert Haring, Cl.	*Massillon*	Δ Υ House.
Chester Morgan Harris, Cl.	*Cleveland*	175 Streator Av.
Arthur Dayton Hughes, Cl.	*Cleveland*	836 Willson Av.
Harvey William Hurlebaus, Cl.	*Cleveland*	9 A. H.
Forrest Everett Hyde. Cl.	*New Lyme*	4 Wilbur Ct.
William Raphael Kellogg, Cl.	*Washington, D. C.*	Β Θ Π House.
John Kramer, M. L.	*Carrollton, Mo.*	7 A. H.
Hubert Alonzo Lane, Cl.	*Kenilworth*	15 A. H.
Milford Foster Lewis, Cl.	*Cleveland*	42 Bolton Av.
Alfred Irving Ludlow, Cl.	*East Cleveland*	Cedar Heights.
Roland Thomas Meacham, Cl.	*Cleveland*	103 Jennings Av.
Richard Edmund Metzger, M. L.	*Cleveland*	220 Osborn St.
Frank Meyer, Cl.	*Cleveland*	27 Daisy Av.
Maynard Hale Murch, Jr., L. S.	*Cleveland*	310 Franklin Av.
Joseph Ray Peck, L. S.	*Cleveland*	78 Archwood Av.
Paul Russell Pope, Cl.	*Cambridge*	Β Θ Π House.
Homer Day Rankin, L. S.	*Cambridge*	13 A. H.
George Miller Sampson, Cl.	*Cleveland*	669 Sterling Av.
George Wheeler Shaw, Cl.	*Green Spring*	24 A. H.
Bret Harte Taylor, Cl.	*Cleveland*	90 Rosedale Av.
Edwin Cooper Vance, Cl.	*Cleveland*	298 Prospect St.
Charles Jesse Wehr, Cl.	*Green Spring*	Goodrich House.
John Lynn Yeagle, Cl.	*Clyde*	18 A. H.

SENIORS, 30.

JUNIOR CLASS.

Jacob Brouner Austin, L. S.	*Cleveland*	217 Oakdale St.
Arthur William Davidson, Cl.	*Cleveland*	23 Superior St.
Sigmund Jay Deutsch, Cl.	*Cleveland*	37 Walker St.
Jo Tuttle Emery, Cl.	*Cleveland*	2036 Broadway
Ray Stewart Gehr, L. S.	*Cleveland*	29 Cutler St.
Anton Felix Gehring, L. S.	*Cleveland*	83 Osborn St.
Homer Brown Haile, L. S.	*Herkimer, N. Y.*	11 A. H.
Theodore Hall, Jr., Cl.	*Ashtabula*	Δ Y House.
Truman Leigh Hamlin, Cl.	*Brunswick, Me.*	60 Bellflower Av.
Harry Adelbert Haywood, Cl.	*Madison*	148 Murray Hill Av.
Edward John Hobday, Cl.	*Cleveland*	182 Ontario St.
Earl Hibbard Jaynes, Cl.	*Des Moines, Ia.*	133 Sayles St.
Nathaniel Moore Jones, Jr., M. L.	*Cleveland*	162 Taylor St.
James Vaclav Kakes, M. L.	*Cleveland*	29 Nursery St.
Frank Summer Manchester, M. L.	*Canton*	Δ Y House.
Roscoe Miliken Packard, Cl.	*Youngstown*	7 A. H.
George Ford Russell, Cl.	*Bellevue*	Δ Y House.
James Harrow Smart, L. S.	*Willoughby*	Willoughby, O.
Dudley Lytton Smith, Cl.	*Cleveland*	40 Cheshire St.
William Peters Strandborg, Cl.	*South New Lyme*	347 Euclid Av.
Hale Sturges, M. L.	*Mansfield*	A Δ Φ House.
Julian Woodworth Tyler, Cl.	*Cleveland*	21 Morse Av.
John Henry Weber, L. S.	*Miamisburg*	B Θ Π House.
Howard Collins White, Cl.	*Mesopotamia*	102 Adelbert St.
Romeyn Dudley Wickham, Cl.	*Norwalk*	A Δ Φ House.

JUNIORS, 25.

SOPHOMORE CLASS.

Walter Silas Adams, Cl.	*East Cleveland*	Euclid cor. Wymore
Walter William Beachboard, Cl.	*Belle Buckle, Tenn.*	20 A. H.
Ernest Crosby Bierce, L. S.	*Cleveland*	131 Streator Av.
Benjamin Rheuben Bourne, Cl.	*Redfield, N. Y.*	133 Sayles St.
John Knowles Bourne, Cl.	*Cleveland*	111 Ingleside Av.
Fred Allen Carroll, Cl.	*Cleveland*	48 Brookfield St.
Verne Williams Clisby, L. S.	*Gustavus*	1637 Cedar Av
Francis Arthur Collins, L. S.	*Lawrence, Kan.*	B Θ Π House.
Floyd Davis Colson, L. S.	*Conneaut*	Δ Υ House.
Dwight Comstock, Cl.	*Buffalo, N. Y.*	38 Streator Av.
William Sykes Couch, L. S.	*Madison*	Madison.
John Paton Davies, Cl	*Cleveland*	841 Fairmount St.
Frank Clifton Dettlebach, Cl.	*Cleveland*	56 Harper St.
Carroll Cleaveland Elliott, Cl.	*Cleveland*	136 Wilbur St.
Ralph Woodbury Elliott, Cl.	*Cleveland*	136 Wilbur St.
Max Joseph Farber, Cl.	*Cleveland*	214 Woodland Av.
Charles Jerome Forbes, Jr., L. S.	*Cleveland*	911 Logan Av.
Samuel Bernard Friedman, M. L.	*Youngstown*	138 East End Av.
George Hitzler Gall, Cl.	*Akron*	Δ Υ House.
Ernest Clinton Gray, L. S.	*Gustavus*	2 Sturtevant St.
Elman Scott Hanson, M. L.	*Cleveland*	1419 Broadway.
Joseph Porter Harris, Cl.	*Warsaw, N. Y.*	60 Bellflower Av.
Hugh Edmund Hawthorne, L. S.	*Cambridge*	117 Adelbert St.
Bruce Wyckoff Huling, Cl.	*Cleveland*	39 Cheshire St.
Francis Sessions Hutchins, Cl.	*Cleveland*	117 Kinsman St.
Foster Williams Jackson, Cl.	*Steubenville*	893 Doan St.
Samuel Kramer, L. S.	*Cleveland*	273 Brownell St.
Norville Wilson Lewis, L. S.	*Cleveland*	42 Bolton Av.
George Douglass McGwinn, M. L.	*Richmond*	2228 Euclid Av.
Dean Colbert Mathews, Cl.	*Painesville*	Δ Υ House.
DeLo Emerson Mook, M. L.	*Cleveland*	352 Prospect St.

George Albert Palda, L. S.	*Cleveland*	1655 Broadway.
Edgar Nathan Parker, L. S.	*Ravenna*	4 Wilbur Ct.
Thomas Day Pierce, Cl.	*Cleveland*	37 Glen Park Pl.
William Piwonka, L. S.	*Cleveland*	2160 Willson Av.
Eugene Jacob Rider, Cl.	*Cleveland*	2210 Euclid Av.
Charles Huntington Smith, M. L.	*Cleveland*	35 Adelbert St.
Vernon Leland Stanford, L. S.	*Ravenna*	8 Wilbur Ct.
Charles Wesley Thomas, Cl.	*Cleveland*	1394 Woodland Hills Av.
Jerry Tracy, L. S.	*Cleveland*	23 Sayles St.
William Colegrove Tuckerman, Cl.	*Cleveland*	298 Central Av.
Warner Hopkins Tuckerman, Cl.	*Cleveland*	298 Central Av.
Arthur Augustus Upton, Cl.	*North Madison*	Collinwood.

SOPHOMORES, 43.

FRESHMAN CLASS.

Karl Campbell Allen, L. S.	*Cleveland*	255 Franklin Av.
Frank Smith Baker, Cl.	*Willoughby*	57 Streator Av.
Edwin Childs Baxter, Cl.	*Los Angeles, Cal.*	29 Cutler St.
Morris Phillips Beers, L. S.	*Bowling Green*	754 Republic St.
Lamar Taney Beman, Cl.	*Cleveland*	29 McConnell St.
Abraham Joseph Bialosky, L. S.	*Cleveland*	192 Woodland Av.
Harvey Scott Brown, Cl.	*Cleveland*	1458 Linwood St.
Mert Leroy Carpenter, L. S.	*Wellington*	959 Doan St.
Francis Isaac Carr, Cl.	*Cleveland*	55 Miles Park.
John Crozer Carr, L. S.	*Cleveland*	55 Miles Park.
William Massey Carruth, Cl.	*Cleveland*	1678 Willson Av.
Howard Dresser Chandler, Cl.	*Cleveland*	144 Sawtell Av.
William Hugus Chapman, L. S.	*Canton*	8 Wilbur Ct.
Herbert John Coates, Cl.	*Cleveland*	58 Archwood Av.
Thomas James Cole, M. L.	*Cleveland*	903 Case Av.
Charles Crosby, Cl.	*Ashtabula*	1645 Cedar Av.
Ernest Ford Donley, L. S.	*Cleveland*	161 Aetna St.
Drury Frederick Dryden, Cl.	*Cleveland*	33 Jennings Av.
Harry Tracy Duncan, Cl.	*Cleveland*	78 Fifth Av.
Alexander Walker Fairbanks, Cl.	*Saybrook*	17 A. H.
Ralph Grosvenor Fitch, M. L.	*Cleveland*	13 Livingston St.
Ernest Holmden Foster, L. S.	*Cleveland*	316 Denison Av.
Isadore Freiberger, M. L.	*Cleveland*	74 Bolivar St.
Stanley Leman Galpin, Cl.	*Cleveland*	106 Miles Av.
Milton Stahl Garver, Cl.	*Navarre*	125 Adelbert St.
Marcus Moses Gunlefinger, Cl.	*Warren*	42 Wallingford Ct.
Benjamin Haber, M. L.	*Cleveland*	8 Lewiston St.
Francis Florian Herr, L. S.	*Cleveland*	699 Scranton Av.
Erie Clark Hopwood, M. L.	*Rowenton*	2 Sturtevant St.
Harry Burren Howells, Cl.	*Newburgh*	Miles Av.
Arthur James Jones, Cl.	*Cleveland*	1311 Harvard St.
Edward William Jones, Cl.	*Cleveland*	1358 Harvard St.
Roland Martin Jones, Cl.	*Painesville*	20 A. H.
Morris William Kastriner, Cl.	*Cleveland*	731 Scovill Av.
Alfred Noah Kellogg, L. S.	*Cleveland*	624 Scranton Av.
Clifford Marshall King, Cl.	*Sandusky*	29 Cutler St.

Harry Koblitz, M. L.	*Cleveland*	1036 Broadway.
Paul Ernest Kroehle, M. L.	*Cleveland*	538 E. Denison Av.
Carl Henri Lenhart, L. S.	*Wauseon*	1234 Oakdale St.
Winfred George Leutner, Cl.	*Cleveland*	98 Bolivar St.
John Roy McDowell, Cl.	*Medina*	126 Murray Hill Av.
Edward Roussel Manning, Cl.	*Cleveland*	17 Vestry St.
Joseph Cullen Messick, L. S.	*Mechanicsburg*	16 A. H.
Herbert Charles Moatz, Cl.	*Akron*	1462½ Cedar Av.
Ezra Morgan, Cl.	*Geneva*	175 Streator Av.
Arthur Garfield Murphy, L. S.	*Logan*	29 Deering St.
Ward Nye, L. S.	*South New Lyme*	1645 Cedar Av.
John William Osborn, M. L.	*Binghamton, N. Y.*	756 Logan Av.
Carroll Adelbert Peabody, M. L.	*Cleveland*	22 Winfield St.
Wayland Buckingham Peck, Cl.	*Cleveland*	729 Republic St.
William Douglass Pew, L. S.	*Warren*	125 Adelbert St.
John Long Riggs, M. L.	*Bryan*	61 Halsey St.
Judson McIntosh Rogers, Cl.	*Willoughby*	Willoughby.
William Ganson Rose, Cl.	*Cleveland*	70 Euclid Pl.
Arthur Dorr Schoepflin, Cl.	*Cleveland*	28 Herald St.
William Sperry Searles, Cl.	*Cleveland*	77 Merchant Av.
George Ambrose Seaton, Cl.	*Cleveland*	103 Glen Park Pl.
Claude Wilber Shimmon, Cl.	*Cleveland*	6 Wageman St.
Parker Fletcher Southwick, Cl.	*Madison*	21 A. H.
Berton Dexter Sutter, L. S.	*Shelby*	117 Adelbert St.
Charles Farrand Taplin, L. S.	*Cleveland*	80 Fourth Av.
Fred Boyd Teter, Cl.	*Bridgeport, Wash.*	Adelbert Col.
Louis Bryant Tuckerman, Jr., Cl.	*Cleveland*	298 Central Av.
Edward Turner, L. S.	*Collinwood*	Collinwood
Hubert John Turney, Cl.	*Madison*	21 A. H.
Ralph Sargent Tyler, Cl.	*Cleveland*	21 Morse Av.
Adelbert Hervey Van Duzer, M. L.	*Cleveland*	186 Kennard St.
Edward Adolph Wankowsky, M. L.	*Cleveland*	518 Hamilton St.
Samuel Arthur Williamson, M. L.	*Cleveland*	1246 Curtis Av.
Michael Cyrillus Yeagle, L. S.	*Clyde*	18 A. H.
Otto Manthey Zorn, Cl.	*Cleveland*	411 Erie St.

FRESHMAN, 71.

SPECIAL STUDENTS.

THIRD YEAR.

Vaclav Svarc	*Cleveland*	2128 Willson Av.
Wallace Martin Swift	*Olivet, Mich.*	122 Streator Av.

SECOND YEAR.

Harvey Julian Bingham	*Cleveland*	209 Bell Av.
Roy Edward Clisby	*Gustavus*	1637 Cedar Av.
Arthur Hanna Folsom	*Cleveland*	269 Franklin Av.
William John Laub	*Akron*	117 Adelbert St.
Warner Marshall	*Youngstown*	11 A. H.
William Alonzo Patton	*Binghamton, N. Y.*	756 Logan Av.
Clinton Celester Reemsnyder	*Akron*	1706 Euclid Av.
Bartlett Carlton Shepherd	*Painesville*	1629 Cedar Av.
Charles William Swartzel	*Winthrop, Ia.*	453 Franklin Av.

FIRST YEAR.

Mark Anson Copeland	*Girard, Pa.*	262 Hough Av.
Walter Severance Gates	*Cleveland*	193 Sawtell Av.
David Klein	*Cleveland*	56 Herschell St.
George Patterson Kurtz	*Nottingham*	Nottingham.
William Arthur Schlesinger	*Cleveland*	129 McBride St.
Clyde Albert Schwab	*Lima*	132 Claremount St.

SPECIALS, 17.

SUMMARY.

Seniors	30
Juniors	25
Sophomores	43
Freshmen	71
Special Students	17
	186

REQUIREMENTS FOR ADMISSION.

CLASSICAL COURSE.

ENGLISH: The examination will consist of two parts. The student will be required to write two essays, of three hundred words each, on subjects chosen from the books marked in the following lists. He will also be required to answer questions on the books marked B. These questions will relate to the author, subject matter, grammatical and rhetorical peculiarities, and will imply minute and critical study.

1898: *A.* Milton's Paradise Lost, Books I and II; Pope's Iliad, Books I and XXII; The Sir Roger de Coverley Papers in the Spectator; Goldsmith's Vicar of Wakefield; Coleridge's Ancient Mariner; Southey's Life of Nelson; Carlyle's Essay on Burns; Lowell's Vision of Sir Launfal; Hawthorne's House of the Seven Gables. *B.* Shakespeare's Macbeth; Burke's Speech on Conciliation with America; De Quincey's Flight of a Tartar Tribe; Tennyson's Princess.

1899: *A.* Dryden's Palamon and Arcite; Pope's Iliad, Books I, VI, XXII and XXIV; The Sir Roger de Coverley Papers in the Spectator; Goldsmith's Vicar of Wakefield; Coleridge's Ancient Mariner; DeQuincey's Flight of a Tartar Tribe; Cooper's Last of the Mohicans; Lowell's Vision of Sir Launfal; Hawthorne's House of the Seven Gables. *B.* Shakespeare's Macbeth; Burke's Speech on Conciliation with America; Milton's Paradise Lost, Books I and II; Carlyle's Essay on Burns.

1900: *A.* Dryden's Palamon and Arcite; Pope's Iliad, Books I, VI, XXI and XXII; Goldsmith's Vicar of Wakefield; Scott's Ivanhoe; DeQuincey's Flight of a Tartar Tribe; Cooper's Last of the Mohicans; Tennyson's Princess; Lowell's Vision of Sir Launfal. *B.* Shakespeare's Macbeth; Milton's Paradise

Lost, Books I and II; Burke's Speech on Conciliation with America; Macaulay's Essays on Milton and Addison.

NOTE: No student will be accepted whose writing is markedly deficient in spelling, punctuation, idiom, or division into paragraphs.

GREEK: Grammar; pronunciation as recommended on Page vii of the Preface to Goodwin's Greek Grammar.

Xenophon—four books of the Anabasis (for which one hundred and ten pages of Goodwin's Greek Reader will be considered as equivalent.)

Homer, three books of the Iliad, with Prosody.

The translation at sight of easy passages in Attic prose.

Prose Composition—The rendering into Greek of simple English sentences. White's Beginner's Greek Book (complete), or Jones' Exercises in Greek Prose (twenty-six exercises), are recommended.

History of Greece—Fyffe's Primer of Greek history, Oman's History of Greece, Meyer's History of Greece, or Pennell's Ancient Greece, may indicate the amount required.

Ancient Geography.

LATIN: Grammar (Bennett, Allen & Greenough); Roman pronunciation.

Cæsar—three books of the Gallic War, or two books of the Civil War.

Cicero—six orations, including De Imperio Gn. Pompeii.

Vergil—the Bucolics, two books of the Georgics and five books of the Æneid, *or*, the Bucolics and six books of the Æneid.

Ovid—Translation at sight.

The translation at sight of passages from prose authors.

Prose Composition—rendering of simple English sentences into Latin.

History of Rome—Smith's Smaller History of Rome, or Creighton's Primer of Roman History may indicate the amount required.

Ancient Geography.

MATHEMATICS: Arithmetic, including the Metric System of Weights and Measures.

Algebra (Loomis, Wells' or Wentworth's College), to the chapter on the Binomial Theorem.

Geometry—(Wentworth or Wells) complete.

NOTE: It is very important that students review a portion at least of both Algebra and Geometry in their last preparatory year.

MODERN LANGUAGE COURSE.

ENGLISH, LATIN, MATHEMATICS, } same as for Classical Course.

FRENCH: Ability to write simple sentences in French.

A thorough knowledge of French Grammar, special attention being paid to the verbs.

Ability to read ordinary French at sight.

The following course is advised:

First Year—French Grammar and exercises; irregular verbs; Super's French Reader; Halévy's L'Abbé Constantin.

Second Year—Grammar with Composition exercises from L'Abbé Constantin (Grandgent).

Sandeau's Mlle de La Seiglière, Hugo's Hernani, Daudet's Contes (Cameron).

Third Year—Review of Irregular verbs, with Composition exercises from La Belle Nivernaise.

Molière's Bourgeois Gentilhomme, or any other comedy of Molière.

Racine's Athalie, Corneille's Cid, Balzac's Eugénie Grandet.

OR

GERMAN: Grammar, with translation at sight of easy German prose.

Prose Composition—the rendering of simple connected prose from English into German.

Ability to pronounce German and to recognize German words and simple phrases when uttered.

In addition, familiarity with the following works, or equivalents, is required:

Riehl—Der Fluch der Schönheit.

Freytag—Aus dem Staat Friedrichs des Grossen.

Heine—Die Harzreise.

Gœthe—First three books of Dichtung und Wahrheit.

Lessing—Minna von Barnhelm.

Schiller—Wilhelm Tell and Das Lied von der Glocke.

Thirty pages of lyrics or ballads.

LATIN—SCIENTIFIC COURSE.

ENGLISH, LATIN, MATHEMATICS, } same as for Classical Course.

CHEMISTRY: Remsen's Chemistry, briefer course, or an equivalent.

PHYSICS: Appleton's School Physics, or an equivalent.

ENGLISH HISTORY: Ransom's Short History of England, or Montgomery's Leading Facts in English History.

EXAMINATIONS FOR ADMISSION.

The regular examination for admission is held at Adelbert College on the Thursday and Friday following Commencement (June 23, 24, 1898); *attendance is required at the opening of the examination at 9 a. m. on Thursday.* The examination is partly oral and partly in writing, according to the following scheme:

First Day—9 A. M. to 12 M., Mathematics (Arithmetic, 9 to 9:30; Algebra, 9:30 to 11; Geometry, 11 to 12); 2 P. M. to 5 P. M., Greek, German and French; 2 P. M. to 3 P. M., Chemistry; 3 P. M. to 4 P. M., Physics; 4 P. M. to 5 P. M., History.

Second Day—9 A. M. to 12 M., Latin; 2 P. M. to 4 P. M., English.

All candidates for admission to the higher classes, whether from other colleges or not, may be required to pass examinations on the studies (or equivalents) previously pursued by those classes in the college course, due regard being paid to such certificates as they bring from their previous instructors.

A second examination for admission, to accommodate those unable to attend the first, is held at Adelbert College, on the Tuesday and Wednesday before the opening of the first term (September 20, 21, 1898), beginning promptly at 9 A. M. The order of examinations is the same as at the regular examination. Candidates applying to be examined at other than these specified times, or late at the *second* examination, must obtain special permission from the Faculty. *Candidates late at the regular examination have no opportunity to make good their loss until the second examination.*

No one is admitted to the Senior class after the beginning of the second half-year.

Satisfactory written testimonials of good moral character are required in all cases, and applicants for admission to the higher classes, who come from other colleges, must present certificates of honorable dismission.

CERTIFICATES OF PREPARATION.—Students from such High Schools and Academies as may be approved by the Faculty, are admitted to College without examination, on the presentation of the form given below. Instructors will be furnished with blank forms on application to the President, with whom they are invited to correspond. Applicants for admission by certificate are requested to present their certificates, or send them by mail to the Dean, Professor Fuller, during Commencement week, or as soon after as practicable.

BLANK CERTIFICATE.

ADELBERT COLLEGE OF
WESTERN RESERVE UNIVERSITY,
CLEVELAND, OHIO: ————————, 189

THIS CERTIFIES That ———————— is a young man of good moral character; that in this institution, which has a three [four] years course of preparation for college, he has completed this course, and that he has mastered the entire requisites for admission to the Freshman Class of Adelbert College of Western Reserve University as follows:

ENGLISH: Composition and Literature as prescribed in the Catalogue. MATHEMATICS: Arithmetic, including the Metric System; Algebra (Loomis, Wells' or Wentworth's College) to the Binomial Theorem; Geometry (Wentworth or Wells) complete. LATIN: Grammar; Cæsar —three books of the Gallic, or two books of the Civil War; Cicero—six orations, including De Imperio Gn. Pompeii; Vergil—the Bucolics, two boods of the Georgics, and five books of the Æneid, or, the Bucolics and six books of the Æneid; Translation at sight from Ovid and simple prose; Prose Composition—rendering simple English sentences into Latin; History of Rome; Ancient Geography. GREEK: Grammar; Xenophon—four books of the Anabasis; Homer—three books of the Iliad, with Prosody; Translation at sight; Prose Composition; History of Greece; Ancient Geography. *In place of Greek*, (for the Modern Language Course): FRENGH: French Grammar; Translation at sight; Prose Compositon; Halévy—L'Abbé Constantin; Sandeau—Mlle de La Seiglière; Hugo—Hernani; Molière—Bourgeois Gentilhomme; Racine —Athalie; Corneille—Cid; Daudet—Contes; Balzac—Eugénie Grandet. *Or*,—GERMAN; German Grammar; Translation at sight; Prose Composition; Riehl—Der Fluch der Schönheit; Freytag—Aus dem Staat Friedrichs des Grossen; Heine—Die Harzreise; Goethe—First three books of Dichtung und Wahrheit; Lessing—Minna von Barnhelm; Schiller—Wilhelm Tell and Das Lied von der Glocke; Thirty pages of lyrics or ballads. *In place of Greek*, (for the Latin-Scientific Course): CHEMISTRY, PHYSICS, ENGLISH HISTORY.

(Signed) ——— ———
Principal of————

N. B. 1. When the above requirements have not been exactly met, the equivalents offered therefor must be specified in detail.

N. B. 2. When a certificate does not meet the above requirements *in full*, the applicant may be required to pass the usual examination in any or all the requirements.

ADMISSION TO PARTIAL COURSES.

Students who may wish to receive instruction without becoming candidates for a degree, are allowed to do so, provided they can meet the regular requirements for admission to the Freshman class, or have successfully pursued other studies which may be accepted as the equivalent of the requirements for admission. Such special students are permitted to take up work only in those courses for which their previous training has fitted them.

They will in general be subject to the same requirements, as to general college regulations, number of hours of work, and standing, as regular students, but each application is considered on its merits.

Such students, on severing their connection with the College, receive certificates of all work satisfactorily completed.

The requirements for admission to each course may be learned on application to the Dean.

COURSES OF STUDY.

FRESHMAN YEAR.

BIBLE I AND II	1 hour a week throughout the year	34 hrs.
CHEMISTRY II (Latin-Scientific Course) FRENCH I AND II (Modern Language Course) GERMAN I (Classical Course)	3 " " "	102 "
ENGLISH I	3 " " "	102 "
GERMAN I (Latin-Scientific Course) GERMAN II (Modern Language Course) GREEK I AND II (Classical Course)	3 " " "	102 "
LATIN I AND II	3 " " "	102 "
MATHEMATICS I, II AND III	3 " " "	102 "
		544 hrs.

SOPHOMORE YEAR.

CHEMISTRY I (Classical and Modern Language Courses)	3 hrs. a week for one (first) half-year	51 hrs.
ENGLISH III (Latin-Scientific Course)		
ENGLISH II OR XX	1 hr. a week throughout the year	34 "
BIOLOGY I	3 hrs. a week for one (second) half-year	51 "

Classical Course.	FRENCH I AND II or GERMAN III	Four of these to be taken three hours a week throughout the year.	408 "
	GREEK III AND IV		
	LATIN III AND IV		
	MATHEMATICS IV, and VI or VII		
	PHYSICS I AND II		
Modern Language Course.	FRENCH (Elective)	Four of these to be taken three hours a week throughout the year.	
	GERMAN IV		
	LATIN III AND IV		
	MATHEMATICS IV, and VI or VII		
	PHYSICS I AND II		
Latin-Scientific Course.	FRENCH I AND II, GERMAN III, LATIN III AND IV — Two of these to be taken	3 hours a week throughout the year.	
	CHEMISTRY, MATHEMATICS IV, and VI or VII, PHYSICS II*a* — Two of these to be taken.		
			544 hrs.

JUNIOR YEAR.

ELECTIVES (incl. group) 15 hours a week throughout the year, 510 hours.

SENIOR YEAR.

ELECTIVES (incl. group) 15 hours a week throughout the year, 510 hours.

ELECTIVE STUDIES.

For the guidance of students of the Junior and Senior classes the following groups of Elective studies have been arranged, and, though not required, each student is strongly advised at the beginning of his Junior year to select one of these groups.

Each group comprises six hours of recitation each week for two years, or an equivalent. These groups are composed in such a way as to form a foundation for the student's work. The opportunity for choosing electives outside the group gives each man a chance to take more work connected with his group, and permits a considerable amount of specialization. If he is disposed to scatter his work, the necessity of preserving the group intact prevents distributing his energies over too wide a field. Special honors, given at the end of Senior year, are offered in each of these groups. Courses or groups are not to be chosen without the previous advice and consent of the instructors who offer them.

OUTLINE OF GROUPS.

I.

CLASSICAL GROUP.

Latin, 3 hours a week, two years.
Greek, 3 hours a week, two years.

II.

MATHEMATICAL-PHYSICAL GROUP.

Mathematics, 3 hours a week, one year and one-half.
Physics, 3 hours a week, one year and one-half.
Chemistry, 3 hours a week, one half-year.
English Literature, 3 hours a week, one half-year.

III.

CHEMICAL–BIOLOGICAL GROUP.

Chemistry, 3 hours a week, one year and one-half.
Biology, 3 hours a week, one year and one-half.
Geology, 3 hours a week, one half-year.
English Literature, 3 hours a week, one half-year.

IV.

PHYSICAL–CHEMICAL GROUP.

Physics, 3 hours a week, one year and one-half.
Chemistry, 3 hours a week, one year and one-half.
Mathematics, 3 hours a week, one half-year.
English Literature, 3 hours a week, one half-year.

V.

GEOLOGICAL–CHEMICAL GROUP.

Geology, 3 hours a week, one year and one-half.
Chemistry, 3 hours a week, one year and one-half.
Biology, 3 hours a week, one half-year.
English Literature, 3 hours a week, one half-year.

VI.

TEUTONIC GROUP.

German, 3 hours a week, two years.
Old English, 3 hours a week, one half-year.
History of German Literature, 3 hours a week, one half-year.
English Literature, 3 hours a week, one year.

VII.

ROMANCE GROUP.

French, 3 hours a week, two years.
Italian, 3 hours a week, one year.
Spanish, 3 hours a week, one half-year.
Latin, 3 hours a week, one half-year.

VIII.

ENGLISH GROUP.

Students desiring to specialize in English are expected to take eight three-hour courses within the fields of Literature, Rhetoric and English Philology.

IX.

HISTORICAL-POLITICAL GROUP.

Students taking the Historical-Political group must take eight full courses in History and Economics, of which at least two courses must be in History and two in Economics. The remaining four courses may be selected from those offered in History and in Economics as the students may desire. Anthropology also may be taken as a study in this group.

X.

PHILOSOPHICAL GROUP.

Psychology and Logic, 3 hours a week, one year.
Ethics and Sociology, 3 hours a week, one year.
History of Philosophy, 3 hours a week, one year.
Religion, 3 hours a week, one year, or
{ Anthropology, 3 hours a week, one half-year, and
{ Political Economy, advanced course, or International Law, 3 hours a week, one half-year.

SYNOPSIS OF COURSES.

The following statements include all courses offered, both prescribed and elective. Each course consists of three weekly recitations of one hour each unless otherwise stated :

ASTRONOMY.

PROFESSOR WHITMAN.

ELECTIVE COURSE.

ASTRONOMY. Young's General Astronomy. The course is mainly descriptive, but the simpler problems of spherical astronomy are discussed, and the students instructed in the use of astronomical instruments. Second half-year.

THE BIBLE.

PRESIDENT THWING.

PRESCRIBED COURSES.

I. THE LIFE OF CHRIST. Essays and discussions upon the principal doctrines of Christianity, one hour a week.

II. THE LIFE OF CHRIST, and the writings of St. Paul, one hour a week.

Freshman Year.

BIOLOGY.

PROFESSOR HERRICK.

PRESCRIBED COURSE.

I. GENERAL BIOLOGY. This course forms an introduction to the study of living things from the basis of morphology, physiology and development. It is designed to illustrate, by the study of a few organisms, the fundamental facts of vital structure and function. The subject is treated as one discipline, the study of vital phenomena, rather than

as botany or zoology, for the more detailed study of which it prepares the student. It begins with the microscopical study of the cell, as illustrated by the simplest organisms, and by the tissues of higher animals and plants. This is followed by the study of mould-fungi, bacteria, algæ, and the principal chemical compounds which characterize living organisms. A fern, taken as a representative of higher plant life, is then studied in detail in regard to structure, functions and development, and its vital phenomena are compared with those of higher and lower forms. This course is concluded with the study of one or more animal types.

The student is required to make pictorial notes of his observations. Printed laboratory directions have been prepared, and the following reference books are recommended: General Biology, Sedgwick and Wilson; Elementary Biology, Parker; Outlines of Classification and Special Morphology, Goebel; Lectures on the Physiology of Plants, Vines and Sachs; Practical Biology, Huxley and Martin, Howes and Scott; Atlas of Biology, Howes. One recitation, two laboratory exercises of two hours each, second half Sophomore year.

ELECTIVE COURSES.

II. MAMMALIAN ANATOMY. This course begins with a general consideration of the structure, classification and development of Vertebrates. The mammalian type is studied upon one of the higher animals, as the rabbit. The comparative study of the hard parts and the mammalian skeleton is followed by the dissection of the more important organs. Each student will be required to make notes and drawings of some special dissection assigned to him during the course.

The following reference books are recommended: Osteology of the Mammalia, Flower; Quain's Anatomy, vol. II, part I, Osteology; Comparative Anatomy of Vertebrates, and Lehrbuch der vergleichenden Anatomie der Wirbelthiere, Wiedersheim; Practical Zoology, Marshall and Hurst; Zootomy, T. J. Parker; Dissection of the Dog, Howell; Dissection of the Cat, Gorham and Power; Anatomie des Kaninchens, Krause. One recitation, two laboratory exercises of two hours, first half Senior year.

III. ANIMAL MORPHOLOGY. The work in this course will include the study of the structure, development and relationship of the principal types of invertebrate animals. Instruction will be given by means of lectures and laboratory work. Laboratory work will embrace the study of all or a part of the following organisms: Sycon and Leucon Sponges, Tubularian and Campanularian Hydroids; Alcyonarian Coral, Actinian, Sea Urchin, Star Fish, Holothurian, Planarian, Tapeworm, Earthworm, Nereis, Cladocera, Cyclops, Parasitic Copepod, Barnacle, Isopod, Stomatopod, Macrouran and Brachyouran (Decapod), Limulus, Scorpio, Blatta, Anodon, Fulgur, Loligo (Squid), Salpa, Amphioxus, and a Teleost. One recitation, two laboratory exercises of two hours each, first half-year.

IV. ELEMENTS OF VERTEBRATE HISTOLOGY. This course consists in the preparation and microscopical examination of the tissues of the body of man and higher vertebrates; Special attention will be given to technical methods in microscopical anatomy, to preparing, staining and sectioning histological material. No student is admitted to this course who has not had preliminary training in general Biology. The principal books of reference are: Lee's Microtomist's Vade Mecum; Quain's Anatomy and Klein's Atlas of Histology. One recitation, two laboratory exercises of two hours each, second half Senior year.

V. VERTEBRATE EMBRYOLOGY. In this course a detailed study of the development of some vertebrate, such as the fowl, amphibian or fish, will be undertaken, and the student will learn how to prepare embryological material, and how to study it. The principal text books followed will be: Elements of Embryology by Foster and Balfour, Text Book of the Embryology of Man and Mammals, Hertwig and Mark, Marshall's Vertebrate Embryology. One recitation, two laboratory exercises of two hours each, second half-year.—*Or*,

VI. BOTANY—VEGETABLE MORPHOLOGY. This course in structural or morphologial botany consists of a comparative study of the principal types of the lower and higher plants considered primarily with reference to their anatomy. Instruction is

given by lectures and laboratory work. The following organisms illustrate the scope of this course: Ustilago, Cystopus (Rust), Aecidium (Cluster-cup fungus), Ulva, Hormactis, Monostroma, Bryopsis, Ectocarpus, Fucus, Sargassum, Callithamnion, Dasya (Algæ), Marchantia (Liverwort), Hypnum (Moss), Equisetum (Scouring rush), Pinus (Conifer), Trillium (Flowering plant). Toward the end of the session practical exercises will be held in the analysis and classification of flowering plants. The principal text-books will be Outlines of Classification and Morphology of Plants by Goebel, and Text-book of Botany by S. H. Vines. One recitation, two laboratory exercises of two hours each, second half-year.

The Laboratory Fees for the different courses are: Course I, $3.00; Courses II, IV and V, $5.00; Courses III and VI, $4.00.

CHEMISTRY.

PROFESSOR MORLEY.

DR. GRUENER.

PRESCRIBED COURSES.

I. CHEMISTRY OF THE NON-METALLIC ELEMENTS. Wurtz's Elements of Chemistry. Required in the Classical and Modern Language Courses, first half Sophomore year. Two recitations and one laboratory exercise of three hours.

II. INORGANIC CHEMISTRY. Freshman year of Latin-Scientific course. Three periods, partly recitation, partly laboratory.

III. A course designed for the Sophomore year of the Latin-Scientific course, the character depending upon the nature of the class pursuing the study. For the past two years a course in Organic Chemistry has been given.

ELECTIVE COURSES.

IV. CHEMISTRY OF THE METALS. Wurtz's Elements of Chemistry. Two recitations and one laboratory exercise of three hours, first half-year.

V. ELEMENTS OF QUALITATIVE ANALYSIS. Three laboratory exercises of three hours each, second half-year.

VI. ORGANIC CHEMISTRY. Remsen's Organic Chemistry. Two recitations and one laboratory exercise of three hours.

The Laboratory Fee for Courses I and IV is $3.00; for Course II, $4.00; for Courses III and VI, $5.00; and for Course V, $6.00. These fees are for each term. Breakage and other damage to apparatus will be charged extra.

ECONOMICS.

ASSOCIATE PROFESSOR WESTON.

ELECTIVE COURSES.

COURSE I should be taken in the Junior year, and may be taken along with Courses II or III. Otherwise, Course I must be elected before any of the other courses, except Courses IV and V.

I. ELEMENTS OF ECONOMICS. The object of this course will be to make the student acquainted with the principles of Economics; while attention will be continually drawn to the bearings of certain economic doctrines upon the more important social and financial problems of to-day. Walker's Political Economy will be used as the basis of study. Reports and papers on assigned subjects will be required. After the holidays the text will be supplemented by informal lectures. First half-year.

II. ECONOMIC HISTORY OF ENGLAND. A study of the economic conditions and industrial development of England, from the time of the Conquest. Occasional notice will be taken of contemporaneous conditions on the continent. One object of the course will be to obtain a better appreciation of the social problems of to-day. Lectures, readings and reports. Each student will be required to prepare a paper upon some subject to which he shall have given special study. 1898–9. First half-year.

III. ECONOMIC HISTORY OF THE UNITED STATES. A study of the industrial development of the United States from colonial times to the establishment of the present industrial system; followed by a study of special conditions and problems arising from the present system and methods,—as crises, trusts and corporations, transportation, relation of public bodies to industries, labor problems and labor legislation. Readings, reports and papers, with occasional lectures. 1897–8. First half-year.

IV. THE STATE. A sketch of the leading theories of the State from the time of Aristotle, in respect to origin, nature and function. The true philosophy of the State. The relation of the state to government and law. Different types of states. Basis of the study, Willoughby's The Nature of the State. 1897–8. First half-year.

V. CIVIL GOVERNMENT. A study of the national, state and municipal governments of the United States. Comparison will be made with other types and systems. Bryce's American Commonwealth (abridged edition), supplemented by readings, reports and lectures. 1898–9. First half-year.

VI. PUBLIC FINANCE. A study of the needs, the sources of revenue, and the expenditures, of a state; of the principles of taxation and of public debts. Plehn's Public Finance will be made the basis of study. Reports and papers required. Second half-year.

VII. MONEY AND BANKING. A study of the principles of money and banking, illustrated by the history of money and banking in the United States, together with a comparative study of the best banking systems of other countries. Particular attention will be given to the history of bimetalism. Lectures and papers. 1898–9. Second half-year.

VIII. THE TARIFF AND REVENUE SYSTEM OF THE UNITED STATES. An historical study of tariffs, and of the development of the system and theory of protection. The history and theory of free trade will receive attention. Also the public debt in its relation to revenue and tariffs. Chiefly readings, reports, and papers, with occasional lectures. 1897–8. Second half-year.

IX. SOCIAL THEORIES. A history and criticism of the doctrines of those ideal social reforms which seek to change existing economic conditions and relations by more or less violent changes in the political structure of society—as socialism, communism, nihilism, and anarchism. Lectures and papers. 1898–9. Second half-year.

X. SOCIAL PROBLEMS. Pauperism and crime. Their causes, methods of relief and prevention, considered historically, theoretically and practically. Lectures, reports and papers. 1897–8. Second half-year.

XI. ECONOMIC THEORIES. Their history, beginning with the Mercantilists. The progress of economic thought and the leading doctrines of the different schools. Selected portions of the writings of the leading economists will be studied. Lectures and special readings. Specially for graduates.

ENGLISH.

PROFESSOR POTWIN (COURSES X—XV, XXIV—XXV). (Absent).

PROFESSOR EMERSON (COURSES I—VI, XVI—XVIII, XX—XXIII).

ASSOCIATE PROFESSOR HULME (COURSES X—XIV).

MR. HOLMES (COURSES I, III).

MR. CRISTY (COURSES XXX—XXXII).

RHETORIC AND ENGLISH COMPOSITION.

PRESCRIBED COURSES.

I. RHETORIC. Study of rhetorical theory from a text-book of rhetoric, analysis of prose selections illustrating the principles of composition, and practice in writing. A short essay or its equivalent each week, with conference for the correction of individual faults. Freshman year.

II. ENGLISH PROSE. A rhetorical study of writers of the nineteenth century, especially DeQuincey, Macaulay, and Carlyle. An essay every two weeks with individual conferences. Sophomores not expecting to elect English in Junior or Senior years. One hour a week throughout the year.

III. ENGLISH PROSE STYLE. A rhetorical study of prose masterpieces. Latin-Scientific course. First half Sophomore year.

ELECTIVE COURSES.

IV. DAILY THEMES. Four short themes are to be written each week on subjects chosen by the student. Conferences with each student for correction and suggestion. First half-year.

V. FORENSICS. Critical study of masterpieces in argument and oratory, with preparation of briefs and argumentative essays. Second half-year.

VI. HISTORY OF ENGLISH PROSE. Lectures on prose writers and the development of prose style. Critical reading of specimens of English prose from Mandeville to Swift, with collateral readings and essays. Second half-year.

LITERATURE.

The courses in Literature are open to those who have taken Course XX in Sophomore year.

X. HISTORICAL DEVELOPMENT OF THE ENGLISH DRAMA. To the time of Shakespeare. Readings. Lectures. First half-year.

XI. SHAKESPEARE AND HIS CONTEMPORARIES IN THE ENGLISH DRAMA. Several of Shakespeare's plays will be studied with the class. Papers. Lectures. Second half-year.

XII. THE CLASSIC MOVEMENT IN ENGLISH LITERATURE. Dryden, Pope and their epoch. Readings from authors writing from 1660 to 1760. Papers. Lectures. First half-year.

XIII. RISE AND DEVELOPMENT OF ENGLISH ROMANTICISM. Especial attention will be paid to English ballad poetry. Readings. Second half-year.

XIV. THE HISTORICAL DEVELOPMENT OF AMERICAN LITERATURE. From its beginnings to the middle of the nineteenth century. Second half-year.

XV. THE HISTORY OF ENGLISH CRITICISM. The study will begin with Dryden, and include the critical works of Johnson, Addison, Hallam and others, down to Matthew Arnold and the critics of to-day. Second half-year.

XVI. POETRY FROM COWPER TO TENNYSON. Study of the revolt against classicism in the eighteenth century, and the development of romanticism as exemplified in the poets under review.

XVII. CHAUCER AND SPENSER. Readings in the Canterbury Tales, the Faerie Queen, and the minor poems of each author. First half-year.

XVIII. THE ENGLISH NOVEL. An historical course beginning with the story-writers of the Elizabethan period, and following the development of the novel through the eighteenth, and early nineteenth century. Readings in Defoe, Richardson, Smollett, Fielding, Goldsmith, Jane Austen, Scott, for the eighteenth century, and in Dickens, Thackeray, Bulwer Lytton, Brontë, George Eliot, Hawthorne, and Kingsley for the nineteenth century. Second half-year.

ENGLISH PHILOLOGY.

PRESCRIBED COURSE.

XX. THE ENGLISH LANGUAGE. An introduction to the history of English with special reference to the sources of modern English. Reading of selections from the older language. An essay every two weeks with individual conferences. A one hour course required of Latin-Scientific Sophomores,

and of all others intending to elect courses in English language or literatere. Throughout the year.

ELECTIVE COURSES.

XXI. OLD ENGLISH. Lectures and recitations upon the language, with readings of selections from Old English prose and poetry. Special attention to the development of the language. First half-year.

XXII. MIDDLE ENGLISH. Lectures on Middle English language and literature, with readings of selections from prose and poetry. Further development of the language with special reference to modern English. Second half-year.

XXIII. ADVANCED STUDY OF OLD AND MIDDLE ENGLISH. Critical reading of texts, study of sources, and of the development of language and literature. Throughout the year.

XXIV. THE POEMS ASCRIBED TO CÆDMON. Text-books: Hunt's Exodus and Daniel, and Wülker's Grein's text of Genesis. Second half-year.

ELOCUTION.

XXX. VOCAL TRAINING. Lectures and drill. Open to all classes. Freshmen may take this the second half-year. One hour a week.

XXXI. ADVANCED CLASS. Principles of delivery and reading. Instruction in gesture. Class and private drill. Open to Sophomores and Juniors. One hour a week.

XXXII. LECTURES ON THE ORATION AND THE DEBATE. With practical work. Private drill in voice culture and delivery. Open to Juniors and Seniors. One hour a week first half-year. Repeated second half-year.

FRENCH.

PROFESSOR WARREN.

PRESCRIBED IN MODERN LANGUAGE COURSE.

I. ELEMENTARY. Grandgent's French Grammar and Lessons and Exercises; Super's French Reader; Sandeau—Mlle de la Seiglière. First half-year.

II. NINETEENTH CENTURY FICTION. Balzac—Le Curé de Tours (Holt & Co.); Daudet—Contes (Cameron's edition); Zola—La Débâcle. Second half-year.

ELECTIVE COURSES.

III. SEVENTEENTH CENTURY. The Drama: Corneille, Molière, Racine. The Prose Writers: Descartes, Pascal, La Rochefoucauld, La Bruyère, Bossuet. Society in the XVII century. 1898-9. First half-year.

IV. RENAISSANCE LITERATURE. Lectures. Reading based on Darmesteter and Hatzfeld's Le Seizième Siècle en France. Study of educational theories in Rabelais and Montaigne. 1898-9. Second half-year.

V. THE ROMANTIC SCHOOL. J. J. Rousseau (Werther, Ossian), St. Pierre, Chateaubriand, Mme de Staël, Nodier, Lamartine, Hugo, de Musset, Dumas. Lectures, 1897-8. First half-year.

VI. THE EIGHTEENTH CENTURY. Voltaire, Montesquieu, Rousseau's Émile, Diderot, Marivaux, Beaumarchais, André Chénier.

REALISTS OF THE NINETEENTH CENTURY. Beyle, Balzac, Mérimée, Flaubert, Daudet, Zola. Lectures. 1897-8. Second half-year.

GEOLOGY AND MINERALOGY.

PROFESSOR CUSHING.

ELECTIVE COURSES.

I. MINERALOGY. Crystallography, and Descriptive Mineralogy. Two hours of recitation and lectures, and one laboratory exercise of three hours. First half-year.

II. MINERALOGY. Determinative Mineralogy and Blow-pipe Analysis. Three laboratory exercises of three hours each. Laboratory fee required. Physical Crystallography may be substituted for the Blow-pipe work. Second half-year.

III. GEOLOGY. Dynamical and Structural Geology. Three hours a week. First half-year.

IV. GEOLOGY. Historical Geology. Lectures and field work in vicinity of Cleveland. Second half-year.

V. PHYSIOGRAPHY. The course and manner of first development of topographic forms. First half-year.

GERMAN.

PROFESSOR HARRIS.

PROFESSOR DEERING (PART OF COURSE I).

DR. MEYER (COURSE II AND PART OF COURSES I AND III).

PRESCRIBED COURSES.

I. ELEMENTARY GERMAN. Harris' German Lessons; German Reader and German Composition; easy texts. In this and the following courses as much of the work as possible will be done in German, but conversation is used as a means, not as an end. Required of all who begin German in college. Throughout the year.

II. SELECTED MASTERPIECES of representative German Authors, the latter part of the year being given to Schiller. The texts read vary from year to year. The first text in 1898–9 will be Lessing's Emilia Galotti. Composition and advanced grammar. For Modern Language Freshmen. Throughout the year.

ELECTIVE COURSES.

III. SECOND YEAR GERMAN. Whitney's German Grammar; Harris' German Composition. Reading of representative literary works. The texts read vary from year to year. The first text in 1898–9 will be Arnold's Fritz auf Ferien. Open to all who have had Course I or its equivalent. Throughout the year.

IV. AUTHOR COURSE. The greater part of the year is given up to the more detailed study of some of the great writers, usually Gœthe, but some other texts are also read. The work is partly in the form of class exercises and partly private reading on which the student is examined. Drill in writing German. Open to all who have had Course II or III or an equivalent. Throughout the year.

The following electives are open to all who have had Course IV or its equivalent.

V. OUTLINE HISTORY OF GERMAN LITERATURE. Recitations from a manual, with collateral readings; lectures on German history and literature. 1898–9. Throughout the year.

VI. MODERN GERMAN PROSE. This Course is given up to the study of a few of the modern writers in the field of history, biography, travels, etc. Essays, lectures, and portions of larger works are read. 1898–9. Throughout the year.

VII. JOSEPH VIKTOR VON SCHEFFEL. A detailed study of the life and works of Scheffel and of his relations to contemporary German literature. 1898–9. First half-year.

VIII. MODERN GERMAN POETRY. German poetry of the nineteenth century with particular reference to the lyrics. First half-year.

IX. GUSTAV FREYTAG. A detailed study of the life and works of Gustav Freytag and of his relations to contemporary German literature. Second half-year.

X. MIDDLE-HIGH GERMAN. This course gives a good reading knowledge of Middle-High German through a careful study of the grammar and the reading of selections from various texts, such as the Nibelungenlied, Hartmann, Walther von der Vogelweide, etc. Throughout the year.

GREEK.

PROFESSORS FULLER AND FOWLER.

PRESCRIBED COURSES.

I. THE STUDY OF HOMER will be continued, and such acquaintance with Homeric dialect, syntax, and style will be assumed as to warrant special attention to the general literary and historical features of the poem from which extracts are read. It will also be a special aim to promote ability to read at sight Homeric pssages of no more than ordinary difficulty. First half Freshman year.

Text books: Merry's Homer's Odyssey, books I-XII; Jebb's Introduction to Homer.

II. SELECTIONS FROM ATTIC ORATORS. Rhetoric; Greek History from 404 to 338.

A Weekly Exercise in Prose Composition will aim to increase the student's facility and accuracy in reading the literature, and in reading at sight.
Second half Freshman year.

Text books: Jebb's Selections from the Attic Orators (2d ed.); Allinson's Greek Prose Composition.

ELECTIVE COURSES.

III. THE DRAMA. Selections, with an introduction to the study of metres and scenic antiquities. Sophomore year.

IV. PLATO'S PROTAGORAS, introducing the student to the study of Socrates, his mission and his methods; Selections from Lucian; Greek Literature, connected survey, illustrated by extracts from authors not previously studied.

V. TRAGEDY. Selected Dramas of Euripides, Sophocles, and Æschylus. This course will aim to promote a careful comparison of the methods and spirit of the three great tragedians. First half-year.

VI. THUCYDIDES, with comparative studies of Herodotus and Xenophon. Certain episodes will be exhaustively studied and all the extant evidence bearing upon them collated and weighed. Emphasis will be laid on the study of the language and style of Thucydides, his historical method, and the art of translating him into idiomatic English. 1897–8. Second half-year.

VII. PHILOSOPHY. Fragments of the pre-Socratic Philosophers (Diogenes Laertius, de vitis, dogmatibus et apopthegmatis philosophorum; Ritter et Preller, Fragmenta Philosophiæ Græcæ), and selections from Plato. 1897–8. First half-year.

VIII. ARCHÆOLOGY. Extracts from the description of the Olympia in Pausanias will be read and discussed, with full illustrations from the great excavations, and a topical study of architecture and sculpture will be pursued. The object of the course is to acquaint the student with the great monuments of art, and to stimulate the faculty of independent observation and criticism. 1898–9. Second half-year.

IX. IDYLLIC POETRY. Critical study of Theocritus, Bion and Moschus. Mimes of Herondas. First half-year.

X. ÆSCHINES AND DEMOSTHENES ON THE CROWN. History and Politics of the Period. 1898–9. First half-year.

HISTORY.

MR. EDWIN VERNON MORGAN.

PROF. HENRY E. BOURNE (COURSES III, VIII, IX, XI).

ELECTIVE COURSES.

I. HISTORY OF THE MIDDLE AGES. An elementary course designed to prepare the student for a detailed study of European history. Informal lectures, prescribed reading with private conferences and examinations, both oral and written. Among the books indicated are:

Emerton's Introduction to the Middle Ages, and Emerton's Mediæval Europe, Gibbon's Decline and Fall, Hodgkin's Italy and her Invaders, Milman's Latin Christianity, Freeman's Short History of the Norman Conquest, and original sources, like Eginhard's Life of Charlemagne. First half-year.

II. HISTORY OF MODERN EUROPE. An outline study of the social and political condition of Europe from 1300 to the French Revolution. The same methods of instruction will be used as in Course I, of which this course is a continuation. Collateral reading in the works of Kitchin, Green, Baird, Gardiner and Macaulay, and in the chronicles of Froissart and de Joinville. Second half-year.

III. HISTORY OF FRANCE, from the fall of the Carolingians to the middle of the eighteenth century. This course concerns the growth of French institutions, and especially the development of the French monarchial system. A reading knowledge of French is desired. 1898–9. Second half-year.

IV. THE RENAISSANCE AND THE REFORMATION IN EUROPE, from the fall of Constantinople to the close of the Council of Trent (1453–1563).

The instruction, which will be conducted by recitations and informal lectures, will trace the development of those forces which were combined in the Protestant revolution of the 16th century. Theses upon selected subjects will be required from each student. Symonds' Renaissance in Italy and Seebohm's Protestant Revolution will be used as text books. 1898–9. First half-year.

V. ENGLISH POLITICAL AND CONSTITUTIONAL HISTORY. From the Roman Conquest to the Revolution of 1689. The work will be based on Gardiner's Students' History of England, with reference to the Constitutional Histories of Stubbs and Taswell-Langmead, Stubbs' Select Charters, and the more important general works covering the period. Second half-year.

VI. AMERICAN COLONIAL HISTORY TO 1783. A study of the discovery and settlement of North America. The work is based on Thwaites' Colonies, with constant use of the sources and more extended treatises. First half-year.

VII. POLITICAL HISTORY OF THE UNITED STATES from 1783 to opening of the Civil War. Channing's The United States of America, Hart's Formation of the Union and Wilson's Division and Reunion, with parallel readings in more extended works, such as those of von Holst, Henry Adams, McMaster, Schouler, Rhodes, the volumes of the American Statesmen Series, Prof. Johnston's articles in Lalor's Cyclopædia of Political Science, etc. Recitations, informal lectures, special reports upon topics assigned to each student individually. Second half-year.

VIII. HISTORY OF THE REVOLUTIONARY PERIOD IN EUROPE, 1789–1815. This course covers, first, the French Revolution, the Consulate, and the Empire; and, second, the reconstruction of Europe under the influence of Revolutionary ideas. The text-book upon which the work is based is Stephens' Europe: 1789–1815. A reading knowledge of French is necessary and of German is helpful in the successful pursuit of this course. First half-year.

IX. THE HISTORY OF EUROPE FROM 1815. This course is a continuation of course VIII, and is carried on by the same method. The text-book is Müller's Political History of Recent Times. Second half-year.

X. THE UNITED STATES since 1865. The political and social problems arising since the Civil War. Bryce's American Commonwealth will be read and discussed. Second half-year.

XI. HISTORY OF COLONIZATION SINCE 1492, with special reference to enterprises undertaken during the last one hundred years. The history of the English colonies in America is not included. 1898–9. First half-year.

XII. THE THIRTY YEARS WAR. Text book, Gardiner's The Thirty Years War. Parallel readings in Schiller, Gindely and the standard works on the period, including the biographies of the chief actors. Recitations, informal lectures, and conferences, at least once a week, with each student. First half-year.

ITALIAN.

PROFESSOR WARREN.

ELECTIVE COURSES.

I. ELEMENTARY. GRANDGENT'S ITALIAN GRAMMAR. Bowen's Italian Reader. Dante—Inferno. 1897–8. First half-year.

II. ADVANCED. Dante—Vita Nuova. Petrarch—Selections from Le Rime. Boccaccio—Selections from the Decameron. Ariosto—Selections from Orlando Furioso. Tasso—Selections from Gerusalemme Liberata. 1897–8. Second half-year.

LATIN.

PROFESSOR PLATNER (Absent).

MR. EMERY.

MR. MABLEY.

PRESCRIBED COURSES.

I. LIVY, books II, III. First half Freshman year.

II. PLAUTUS, two or three plays. HORACE, Satires (Kirkland's ed.). Second half Freshman year.

ELECTIVE COURSES.

III. ODES OF HORACE. First half Sophomore year.

IV. TACITUS, Germania and Agricola (Hopkins' ed.). JUVENAL, Satires (Pearson and Strong's ed.). Second half Sophomore year.

Each of the Elective Courses for Juniors and Seniors will usually be given once in two years, thus forming a two-year cycle for the classical group.

V. CICERO'S LETTERS. A study of selected letters, historical, literary, and stylistic. First half-year.

VI. LUCRETIUS. A large part, sometimes all of the De rerum natura is read, either in or out of the class, partly rapidly, partly carefully. The purpose of this course is not to discuss Lucretius' philosophy any further than is necessary to a literary appreciation of his work. Catullus is sometimes included in this course. Second half-year.

VII. ROMAN ARCHÆOLOGY. Topography and monu[illegible] Ancient Rome. The instruction is [illegible]

lectures and conferences. A considerable archæological apparatus has been accumulated, consisting of about 500 photographs, and many of the standard works. The hand-book used as a guide is Richter's Topographie der Stadt Rom, and constant reference is made to the following works: Corpus Inscriptionum Latinarum with Ritschl's Priscæ Latinitatis Monumenta Epigraphica, Middleton's Remains of Ancient Rome, Lanciani's Ancient Rome, and archæological map of Rome now being published, Jordan's Topographie der Stadt Rom, Burn's Rome and the Campagna, Overbeck's Pompeii, Bunsen's Beschreibung der Stadt Rom, Boissier's Promenades Archéologiques, Daremberg et Saglio's Dictionnaire des Antiquités, and Baumeister's Denkmäler des klassichen Altertums.

Each student will present a thesis at the end of the term, containing the result of some special subject of investigation. 1898–9. First half-year.

VIII. LATIN OF THE SILVER AGE. This course will be based mainly on the letters of Pliny the Younger, Seneca, Tacitus, and Suetonius. The style and diction as contrasted with Cicero's standard, and the general conditions of life under the empire, will be illustrated as fully as possible. 1898–9. Second half-year.

IX. THE TRAGEDIES OF SENECA, with a comparison of the corresponding French tragedies, and a short study in the development of the drama.

Intended primarily for students in the Romance Group.

X. THE ROMAN ANNALISTS AND EARLY ROMAN HISTORY. This course comprises two parts: (a) The sources of our knowledge of early Roman history. The origin and growth of the traditional history. The annalists and their works and the use made of them by later historians. (b) A reconstruction of the early history of Rome.

MATHEMATICS.

PROFESSOR SMITH.

MR. DICKERMAN.

PRESCRIBED COURSES.

I. PLANE TRIGONOMETRY.

II. PLANE ANALYTIC GEOMETRY. Construction and Discussion of Equations, Straight Line, Circle, Parabola, Ellipse.

III. MECHANICS. Elementary principles in reference to solid bodies.

Freshman year.

ELECTIVE COURSES.

IV. ALGEBRA (advanced course). First half-year.

V. PLANE AND SOLID ANALYTIC GEOMETRY (advanced course). First half-year.

VI. SPHERICAL TRIGONOMETRY. Applications of Trigonometry. Second half-year.

VII. ELEMENTS OF DIFFERENTIAL AND INTEGRAL CALCULUS. Second half-year.

VIII. DIFFERENTIAL AND INTEGRAL CALCULUS (advanced course). First half-year.

Open only to those who have taken course VII.

IX. THE THEORY OF EQUATIONS. Burnside and Panton's Theory of Equations. 1897–8. Second half-year.

X. QUATERNIONS. Kelland and Tait's Introduction to Quaternions. 1898–9. Second half-year.

XI. DIFFERENTIAL EQUATIONS. Johnson's Differential Equations. Second half-year.

MEDICINE.

ELECTIVE COURSES.

Seniors in Adelbert College may take elective work in the Medical College of the University; not to be counted for more than six hours per week, as leading to an academic degree.

By availing themselves of this opportunity and by proper choice of electives in the college, they will be able to complete one of the four years required for the degree in medicine during their academic course.

For details of such courses application should be made to the Dean of the Medical School, Dr. Powell.

PEDAGOGY.

ASSSOCIATE PROFESSOR MACDOUGALL.

ELECTIVE COURSES.

I. HISTORY OF EDUCATION. 3 hours a week, first half-year. The course will begin with a sketch of ancient ideals of education, Greek and Roman, and the relation of their educational systems to the social-political life. It will then consider the change in educational system and method due to the transformation of social and religious ideals in the middle ages. From the time of the Reformation the topic will be taken up in more detail. The rise of universities, the growth of common schools, educational reform, the establishment of national school systems, and like movements will be studied with a view to obtaining a coherent knowledge of the rise and development of existing principles and methods of education.

II. EDUCATIONAL CLASSICS. 3 hours a week, second half-year. This course is based upon a critical reading of as many of the educational classics as time will allow. These will be Comenius, Froebel, Pestalozzi, Herbart, Spencer, with references to Ascham, Locke, Rousseau and others. The aim of the course is to obtain a clear idea of the fundamental principles of these successive reformers and to follow the progress of educational ideals. Lectures, discussions, reference reading and reports on special topics.

III. PEDAGOGICAL THEORY. 3 hours a week, first half-year. A discussion of the nature and aims of education, and of general pedagogical methods: Child nature, the general question of incentives and deterrents, interest, imitation, ripening of instincts, rewards and punishments, character in education, special education, relative value of studies, education of the voluntary attention, feeling and emotion in education. Lectures, theses, and private reading.

IV. PSYCHOLOGY IN EDUCATION. 3 hours a week, second half-year. This course requires no text-book, but students will be expected to co-operate with the instructor in consulting and making reports upon literature on the following topics. (*a*) The Mutual Relations of Mind and Body: The Reflex Arc, Sensory and Motor Education, Defects of Sight and Hearing, Manual Training. (*b*) The Mind of the Child and its Development. (*c*) Growth of the Nervous System: Nascent Periods, Physical Measurements, Sex in Development, Neuroses of Childhood and Development, Adolescence; Sequence in Education; Fatigue, Overpressure, Neurasthenia, Stimulants. (*d*) Plasticity of the Nervous System: Habit, Association, Memory and its improvement. (*e*) Apperception and Interest, Imitation, Attention, Suggestion (Hypnotism), Will and its training. (*f*) Emotional Health, Morbid Types, Conscience. (*g*) Belief: The Psychological Aspect of Scepticism.

V. NATIONAL SCHOOL SYSTEMS. 3 hours a week, second half-year. School systems of Europe; the German system; France; the schools of England; the recent movement in Norway. The

growth of the modern idea of system; school organization; relation of the school to the state. Study of typical schools in organization and method. Our own school system. Recent movements of reform. Lectures, reports in literature and statistics, private reading, discussions.

OR,

PEDAGOGICAL SEMINARY.

For advanced students only. Reading on special topics, under guidance of the instructor, and original investigation. Reports of literature on recent changes and reforms. Discussion of contemporary topics.

PHILOSOPHY.

PROFESSOR CURTIS.

ASSOCIATE PROFESSOR MACDOUGALL.

ELECTIVE COURSES.

The following chronological order will be observed. Students wishing to elect any of the more advanced courses (V-VIII) in the Senior year are advised to take Courses I, III, and IV, in Junior year.

I. PSYCHOLOGY. An elementary course which will present in outline the entire subject matter, with special emphasis upon the functions of the Nervous System and the process of Perception. Wundt's Psychology will probably be used as a hand-book. First half-year.

II. ANTHROPOLOGY. The main problems and bearings of Anthropology will be discussed in systematic order. The objective method in its comparative and historical aspects will be used. Lectures will be given on the history of Anthropology, and an effort made to understand its position in the

present century. The object of the course is to open the way for an intelligent study of philosophy and history. Among other works the following will furnish aid: Morgan's Ancient Society, Quâtrefages' Human Species, Tylor's Anthropology, Prichard's Natural History of Man, Darwin's Descent of Man, Brinton's Races and Peoples, and Ratzel's History of Mankind. First half-year.

III. LOGIC. Jevons' Lessons in Logic, or Fowler's Logic, Deductive and Inductive, will be used as a guide. The works of Mill, Minto, Hibben, Venn, Monck, Lotze and Ueberweg will be consulted on special points, and toward the close of the course a few lectures will be given on Epistemology. The course as a whole will constitute an introduction to Epistemology. Second half-year.

IV. INTRODUCTION TO PHILOSOPHY. Will probably be given in the form of lectures by the instructor and reports on assigned topics by the students. Fraser's Selections from Berkeley, Paulsen's Introduction to Philosophy, Kuelpe's Introduction to Philosophy, Ladd's Philosophy of Mind, and Introduction to Philosophy, and Royce's Spirit of Modern Philosophy are among the references. Second half-year.

V. ETHICS. Muirhead's Elements of Ethics will be read with constant reference to the works of Green edited by Nettleship and to the works of Sidgwick and Martineau. The purpose is to make clear and distinct an outline of Ethics. First half-year.

VI. (*a*) GREEK PHILOSOPHY AND ITS RELATION TO THE RISE OF CHRISTIANITY. A review of the rise and trend of philosophic thought among the Greeks and Romans from about 600 B. C. to 500 A. D. The main points kept in view are: (1) how the early philosophers treated the problems of life and mind, and (2) how their treatment of these problems is related to the rise and development of Christian Doctrine. The works of Zeller, Weber, Marshall, Grote, Jowett, Ueberweg, Heinze, Ritter, Harnack, and Hatch are among the references.—*Or*,

(*b*) BRITISH PHILOSOPHY FROM BACON TO HUME. Lectures, recitations, and private readings. The purpose of this course is to acquaint the student with the classics of British Empiricism by means of selections from Bacon's Advancement of Learning and Novum Organum, Hobbes' Leviathan, Locke's Essay Concerning Human Understanding, Berkeley's Principles of Human Knowledge, and Hume's Treatise of Human Nature. The course will bring forward the main problems of Modern Philosophy. Such features as are specially prominent today will be indicated and outlined. Among the general reviews of this period mention may be made of Morris' British Thought and Thinkers, Hoeffding's History of Modern Philosophy, Fraser's Selections from Berkeley, and Grimm's Zur Geschichte des Erkenntnisproblems von Bacon zu Hume. First half-year.

VII. (*a*) INTRODUCTION TO THE HISTORY AND PHILOSOPHY OF RELIGION. The aim of this course is to present Religion in its psychological, historical, critical, and constructive aspects. The course will be based upon Menzies' History of Religion and Principal Caird's Philosophy of Religion.—*Or*,

(*b*) INTRODUCTION TO SOCIOLOGY. The course in Sociology is open only to students who have taken courses I, II, and V. Lectures will be given by the instructor throughout the term and special work will be assigned to each student for report and discussion. Among other works those of Comte, Buckle, Spencer, Ward, Giddings, Letourneau and Fairbanks will be consulted. Second half-year.

VIII. (*a*) THE PHILOSOPHY OF HERBERT SPENCER. A critical study of Spencer's elaboration of the principle and process of Evolution along with the application of Evolution to Philosophy. Selections from the following parts of his work are thus examined: First Principles, The Principles of Biology, The Principles of Psychology, and The Principles of Sociology. Lectures will be given with the aim of showing the historical development and present condition of evolutional thought. Digests and critical essays will be required for the purpose of bringing into prominence the main questions of Cosmology,

and the bearing of Evolution on recent thought. The more important handbooks for this study are Spencer's First Principles, Collins' An Epitome of the Synthetic Philosophy, and Leconte's Evolution in its Relations to Religious Thought.—*Or*,

(*b*) THE PHILOSOPHY OF KANT. After the results of Hume's Philosophy have been reviewed, Kant's Critique of Pure Reason will be taken up and the object of knowledge carefully studied. This will be followed by a discussion of the Metaphysics of Morality, the Critique of Practical Reason, and the Critique of Judgment. If time permits, a brief sketch of Idealism in Germany will be given. For this course some knowledge of German will be advantageous. Watson's Selections from Kant furnishes a valuable outline. Second half-year.

PHYSICS.

PROFESSOR WHITMAN.

MR. WOODWARD.

PRESCRIBED WORK.

A. A limited number of laboratory exercises in connection with mathematics III.

ELECTIVE COURSES.

I. MECHANICS, SOUND, LIGHT. Carhart's University Physics with lectures and laboratory work. First half-year.

II. HEAT, ELECTRICITY AND MAGNETISM. Continuation of Course I. Second half-year.

II*a*. No special course is offered for those entering the Latin-Scientific course, but arrangements are made by which the attainments of those who have had a preparatory course in physics may be fully utilized.

III. PHYSICAL OPTICS. Glazebrook's Physical Optics, with lectures and laboratory work. First half-year.

IV. THEORY OF HEAT. A course based mainly on Maxwell's Theory of Heat, with lectures and references. Second half-year.

V. THEORY AND PRACTICE OF ELECTRICAL MEASUREMENTS. While mainly a laboratory course, this includes a general review of Electrical Theory. The text book will depend somewhat on the character of the class. Two laboratory exercises and one conference, first half-year.

VI. Continuation of Course V. Second half-year.

VII. MECHANICAL DRAWING. Elementary Course. Text book: Church's Descriptive Geometry. Two laboratory exercises and one recitation. First half-year.

VIII. (*a*) MECHANICAL DRAWING. Advanced Course. With applications of the principles of mechanics to the design of machinery.—*Or*,

(*b*) AN INTRODUCTION TO ELECTRO-TECHNICS. The application of electricity in the arts, and the principles involved. Course *a*, two laboratory exercises and one recitation. Course *b*, two recitations and one laboratory exercise. Second half-year.

An elementary knowledge of the Differential and Integral Calculus is necessary for Courses IV, V and VI.

The Laboratory Fee for Course *A* is $3.00, for the other courses, $5.00.

SANSKRIT.

PROFESSOR PLATNER (Absent).

ELECTIVE COURSES.

I. ELEMENTARY COURSE, designed primarily for those students who elect the classical group. The text books are Whitney's Grammar and Lanman's Reader. Throughout the year.

II. ADVANCED COURSE, for students who may desire to continue this study in connection with a short course in General Linguistics.

SPANISH.

PROFESSOR WARREN.

ELECTIVE COURSE.

I. EDGREN'S SPANISH GRAMMAR. Matzke's Spanish Reader. Modern Novelists. Selections from Cervantes, and Lope de Vega. 1898-99. First half-year.

TERMS AND VACATIONS.

The first half-year begins on the Thursday after the eighteenth day of September, and continues, with a holiday recess of nine days, until the Saturday after the first Thursday in February. The second half-year begins on the Monday after the first Thursday in February, and continues, with an Easter recess of one week, until Commencement, which occurs on the Wednesday after the seventeenth day of June (or after the sixteenth in years in which February has twenty-nine days). On Thanksgiving day, the twenty-second of February, and Decoration day, no college exercises are held; on the day of prayer for colleges, religious exercises are held in the chapel.

The exercises of each half-year begin with prayers in the chapel at half-past eight o'clock.

RELIGIOUS WORSHIP.

The exercises of each day are opened with prayers in the chapel, which all students are required to attend, unless specially excused by the executive committee. At this service addresses are frequently made by the clergymen of Cleveland and other cities.

All students are expected to attend morning service on Sunday in the churches of the city. It is desired that students should connect themselves with the churches of their choice, attend their Sunday schools, and enter as far as possible into their religious activities.

The Young Men's Christian Association of the college holds its meetings in Eldred Hall. This building is devoted entirely to the social and religious work of the Association.

LIBRARIES.

The libraries of the College and those deposited in the College by the literary societies contain about thirty-five thousand bound volumes and ten thousand unbound books and pamphlets. They are commodiously housed in the Hatch Library building, the gift of Mr. Henry R. Hatch, of Cleveland. The collections relating to the study of the German language and literature, French literature, United States history, and the history of the French revolution are particularly full.

The list of periodicals is a very full one, and the library contains many complete sets of valuable publications in classical philology and archæology, Germanic and general philology, history, anthropology, science; and complete sets of the oldest and best literary magazines. These sets are kept up to date and their number is increased by constant accessions.

The libraries of the literary societies are treated as one with the college library, the whole collection being classified according to a modified Dewey system. The students have access to all the books on the shelves, and the library is open from 8 A. M. to 5:30 P. M.

By the courtesy of the directors of the Case Library, students have free tickets to it, while they may use the Public Library on the same conditions as other residents of the city.

The Case Library (42,000 vols.) is well supplied with periodicals and general literature, and offers excellent facilities for study in the fine arts, of political economy and sociology, and the sciences, especially chemistry and botany. The Cleveland Public Library (125,000 vols.) contains valuable collections for the study of Shakespeare, modern German literature, history, art and archæology.

LABORATORIES AND MUSEUMS.

BIOLOGY.

A new laboratory building, especially designed for the study of the biological sciences, particularly for work in zoology, embryology, anatomy and botany, was begun in October, 1897, and will probably be completed by June, 1898. The building will consist of three stories. On the first floor, which is devoted chiefly to anatomy and botany, there are two small wings, one of which will contain the heavy gearing and machinery used in heating and lighting. The other wing contains a small conservatory and vivarium. The second story consists of a large elementary laboratory, special laboratories for embryology and zoology, library, preparation rooms and offices for instructors. On the third story there is a large and commodious lecture room, and museum rooms for a teaching collection of animals and plants. The popular collections of natural history will be placed in the wide halls of the building. The third story will also contain a complete photographic laboratory.

CHEMISTRY.

The department of chemistry is well supplied with apparatus for use in illustrative lectures. The chemical laboratory is so equipped with apparatus that each student can become familiar with the facts of the science by experiments made by himself under the guidance of the instructor. Such experimental courses are offered in the chemistry of the non-metallic elements, in the chemistry of the metals, in organic chemistry and in analytical chemistry.

GEOLOGY AND MINERALOGY.

The laboratory of this department is, at the present time, on the third floor of the main building. The collections at the service of the department are well chosen, and are rapidly growing. They comprise sets of crystal models and crystals, crystal sections for optical study, and rock sections in great number, in addition to the mineralogical, lithological and palæontological collections. The library is good and constantly being increased. The vicinity of Cleveland is interesting geologically, especially in regard to its glacial deposits and its palæontology. It furnishes abundance of material for the special investigator.

PHYSICS.

The facilities for the study of physics have been greatly improved by the new physical laboratory. This is a three story building of sound and substantial construction, containing large lecture and laboratory rooms for the elementary courses, and a considerable number of smaller apartments for more advanced work. Especial attention has been paid to heating, lighting and ventilation.

The department is equipped with a large variety of apparatus bearing on the courses at present offered—all of which include work in the laboratory—and additional apparatus is continually being added.

GYMNASIUM AND ATHLETIC FIELD.

At the southern end of the campus stands the gymnasium and beside it is the new athletic field. The gymnasium is well equipped with the latest and most approved style of apparatus. All members of the Freshman class are required to take systematic exercise three times a week during six months of the year. Opportunity is given to members of the other classes to take systematic exercise during the same period. All work is under the supervision of the director of the gymnasium.

The athletic field has been graded and fenced, and grandstands erected. All college games can thus be played on the campus itself, and most of the evils attendant upon inter-collegiate contests avoided.

GRADES OF SCHOLARSHIP.

Students are graded in their studies by letters which have value on a scale of 8 as follows:

E (excellent)	7-8
G (good)	6-7
F (fair)	5-6
P (pass)	4-5
D (deficient)	-4

Instructors combine the grades of each half-year's work and of examinations in any ratio they see fit, and report to the

Dean at the close of each half-year the resultant grades expressed by letters. The Dean reports the grade of each student to his parent or guardian at the close of each half-year.

If a student's term standing in any study is not below grade P but he fails in his examination, the instructor hands in his grade as D and also a notice that he is to be re-examined in that study. When he has passed this re-examination notice is at once given to the Dean by the instructor, and his deficiency is cancelled.

If a student has grade D in the class-work, of any study, he is not allowed to enter the examination, and cannot graduate until he has made up the study or satisfied the head of the department that he has properly made up the work, and it has been reported to the Dean. But, in case the study in which the student is deficient is an elective, he may take in class some other elective of the same number of hours per week, and the satisfactory completion of such elective will be regarded as removing his deficiency.

A condition in any study is placed upon a student when he cannot go on in any of his studies, unless he makes up his deficiency before a specified time.

No student is allowed to enter the second half of his Senior year who has not made up all his deficiencies.

Any student whose grade is D in the class-work of any study, may be dropped from that study at any time by a majority vote of the executive committee and the instructor whose course is involved. He shall be so dropped when he has had grade D for six consecutive weeks, unless by a majority vote of the same persons he is allowed to remain in the study under special probation for a short time. In all cases a student's grade is determined by all his previous work in a study from the beginning of the half-year.

Regular students are not in general allowed to become special students on account of failure to maintain themselves in their regular work, but individual cases may be considered on their merits by the executive committee.

Care over the work of students is exercised by the executive committee. The method is as follows:

When the grade of a student becomes D in any study, the instructor reports the fact at once to the Dean, who sends an official notification of the deficiency to the student and to his parent or guardian. The instructor keeps the Dean informed if the student's grade continues D.

In the case of students received on certificate the first half-year will be regarded as probationary, and those manifestly deficient in preparation may be dropped at any time.

Once a month the Dean reports to the Faculty all information in regard to the grades of students which he has received from instructors.

DEGREES.

In order to be recommended for a degree a student must have passed in all the studies of his course, and have attained a grade "Fair" or a higher grade in at least one-third of them.

The degree of BACHELOR OF ARTS is conferred on those who have completed that regular course which includes the study of the Greek language and literature; the degree of BACHELOR OF LETTERS on those who have completed the course in which modern languages are substituted for Greek; and the degree of BACHELOR OF PHILOSOPHY on those who have completed the course in which more advanced science is substituted for languages.

Members of classes earlier than that of 1890 may receive the degree of MASTER OF ARTS as heretofore, or, if they prefer, after a special course of study. The fee for the Master's degree is ten dollars. For further information candidates may address the Secretary of the Faculty, PROFESSOR WARREN.

HONORS AND PRIZES.

In Chemistry, French, German, Greek, Latin and Mathematics, two-year honors are given to those students who, at the completion of the Sophomore year, have attained grade "Excellent" in each course of these departments during two years, and grade "Fair" or a higher grade in all of their other studies.

To be eligible to honors in a group of studies, a student must attain grade "Excellent" in each study of the group, pass special examinations in the principal studies of the group, and must have attained grade "Fair" or a higher grade in all studies outside the group during the last two years. Instructors in charge of a group are to recommend candidates for first and second honors respectively.

Honors are awarded to the graduating class at each Commencement, and to the Junior class at the end of Junior year. These honors are determined by the standing of the students in all their previous college work.

To be recommended for a degree with honor, a student must have attained grade "Fair" or a higher grade in all his college work; for degree *summa cum laude*, grade "Excellent" in five-sixths of all his work; for degree *magna cum laude*, grade "Excellent" in one-half of all his work, or "Excellent" or "Good" in five-sixths of it; for degree *cum laude*, "Excellent" or "Good" in one-half of all his work.

PRESIDENT'S PRIZES are offered for 1897-98 as follows:

Members of the Sophomore and Junior classes engage in an oratorical contest, near the end of each college year, for prizes, which are awarded for excellence in producing and speaking orations, as follows:

Two first prizes of fifty dollars each to the members who rank first in each class; and a second prize of thirty dollars, awarded irrespective of class.

A prize of twenty-five dollars for the best results in gymnasium work during the Freshman year.

Two prizes, one of thirty and one of twenty dollars, will be awarded at the end of the Freshman year to the two students making the highest records in ancient and modern languages, as determined by the regular class-work and by a special examination at the end of the year.

Two prizes, one of thirty and one of twenty dollars, will be awarded at the end of the Freshman year to the two students making the highest records of that year in mathematics, as determined by the regular class-work and a special examination at the end of the year.

PHILOSOPHICAL PRIZES, through the kindness of Mr. Truman P. Handy, are offered as follows: A prize of sixty dollars and a prize of thirty dollars, awarded by a committee at the close of the college year, to the two members of the philosophical group who shall excel in an original essay and a special examination. The subject assigned for 1897-8 is, The Nature, Use and Abuse of Analogical Reasoning.

THE HARRIET PELTON PERKINS SCHOLARSHIP, being the income of a fund of two thousand dollars, given for that purpose by Mr. Edwin R. Perkins, is awarded annually to that member of the Junior class, classical course, who, during the first three years of his course shall rank first in his class for

excellence in the English language and literature. In addition to the required English of the first two years at least three hours a week must be elected for both terms of the Junior year. The successful applicant for this scholarship must also rank in the first third of his class in the study of the classics—both Latin and Greek being required throughout Sophomore year—and must continue his studies in the College through his Senior year, unless disabled by illness, or some other cause which shall be deemed satisfactory.

Opportunity is given to students with advanced preparation to pursue studies and investigations outside of the prescribed course under the direction and assistance of the Faculty, provided they maintain a standing of at least G in each of their regular studies. Students who pass successful examinations in these additional studies may be exempted from a portion of the regular examinations, and receive honorable mention in the catalogue. Due notice of this optional work is given each class at the beginning of the college year, and also of the time and place of examination, and permission to enter such examination must be obtained by the student at least six weeks before the regular examinations.

FRANCIS G. BUTLER PUBLICATION FUND.

In March, 1893, Mrs. Julia W. Butler gave one thousand Dollars to found the Francis G. Butler Publication Fund, "the income from the fund to be devoted to the publication of the results of original research in the field of American history, made by the Professors or students of Adelbert College, the College for Women, or the Graduate School of Western Reserve University."

EXPENSES.

The College Charges are as follows:

MATRICULATION	$ 5.00
DEPOSIT	10.00
TUITION, INCIDENTALS, LIBRARY, and GYMNASIUM	75.00

Adelbert Hall offers a limited number of large, pleasant unfurnished rooms, heated by steam, and cared for daily by the College. The rooms are designed for two students, and the rent is from $30 to $40 per year for each student.

Students taking work in the biological, chemical and physical departments pay for the cost of perishable material and the loss incident to the use of the instruments. Laboratory fees vary for the different courses. The amount for each course is specified in the statement of courses.

All charges are to be paid to the Bursar—the matriculation fee and deposit at the time of registration; the laboratory fee and one-half the charge for tuition, etc., and room rent, within fourteen days of the opening of each half-year. Unless drawn upon to repair damages to college property not due to ordinary wear, the deposit will be returned in full to the student when he severs his connection with the College.

A refectory in connection with Adelbert Hall offers board at a cost not to exceed $3 per week.

Board and rooms in private families in the vicinity of the College can be obtained at about the same prices as those above specified. Board in clubs has been obtained for $2 and $2.50 per week.

BENEFICIARY AID.

Certain scholarships are awarded to meritorious students who need pecuniary aid. By these they are relieved of a portion of the fixed charges of the College. The scholarships are founded by gifts of $500 each, and are worth the interest of that sum at 6 per cent—$30 per year. A few of those students who have a thorough preparation for College are enabled to earn more or less money by teaching or other labor.

There are also funds which are loaned to students recommended by the Faculty. When repaid they will be used in aiding other students.

Students put upon the list of beneficiaries are expected to maintain their standing in Scholarship, and also to finish their course here. Before dismissal to another college can be granted, the college dues, including the amounts given or loaned, must first be paid.

APPENDIX.

COMMENCEMENT, 1897.

The degree of BACHELOR OF ARTS was conferred upon

ARTHUR HOLBROOK BILL,
GEORGE CHARLES CLISBY,
EDWARD LEWIS DODD,
(*Magna cum laude*).
JOHN DUNCAN EVANS,
CHARLES WALTER FISK,
HAROLD DEWOLF FULLER,
(*Magna cum laude*).
FREDERICK CHARLES GILLETTE,
LEWIS HODOUS,
(*Summa cum laude*).
DAVID GAUL JAEGER,
(*Magna cum laude*).
FRANKLIN TURNER JONES,
(*Magna cum laude*).
SIDNEY JONES,
WILLIAM HENRY MEANS,
FRANK PERCIVAL OWEN,
HARRY FRANKLIN PAYER,
(*Magna cum laude*).
FRANZ RACE PHILLIPS,
HARRY MILLHOFF RIDER,
GEORGE FRANK THOMPSON,
JACOB EDWARD TUCKERMAN,
FREDERIC MARCUS WOOD.

The degree of BACHELOR OF LETTERS was conferred upon

EDGAR MCMILLAN ICKES,
MAX EMIL MEISEL,
CHARLES REES MORGAN,
AMOS WILLIAM PETERS,
WILLIAM FIELDER SANDERS,
(*Magna cum laude*).
WALTER LAWRENCE SEAMAN,
(*Cum laude*).

The degree of BACHELOR OF PHILOSOPHY was conferred upon

JOHN CHARLES DARBY,
WILLIAM CRAW GILL,
LOUIS OSCAR RICHMOND,
HARRY NELSON WHEATON.

HONORS AND PRIZES OF THE YEAR 1896-7.

COMMENCEMENT HONORS.

First Honor, LEWIS HODOUS.
Second Honor, EDWARD LEWIS DODD.
Third Honor, WILLIAM FIELDER SANDERS.
Fourth Honor, DAVID GAUL JAEGER.

THE HANDY PHILOSOPHICAL PRIZES:

First Prize, LEWIS HODOUS.
Second Prize, EDWARD LEWIS DODD.

JUNIOR CLASS
SCHOLARSHIP HONORS TO

WILLIAM EDWARD GUNN,
HARRY ALBERT HARING,
HARVEY WILLIAM HURLEBAUS,
PAUL RUSSEL POPE.

PRESIDENT'S PRIZES:

For best Junior and Sophomore Orations,

First Junior Prize, FORREST EVERETT HYDE.
First Sophomore Prize, EDWARD JOHN HOBDAY.
Second Prize (*awarded irrespective of class*), HUBERT ALONZO LANE.

For the highest records in Ancient and Modern Languages for the Freshman year. Both prizes awarded in equal shares for equal merit to

FRANCIS SESSIONS HUTCHINS,
CHARLES WESLEY THOMAS.

For the highest records in Mathematics,

First Prize, WILLIAM PIWONKA.
Second Prize, SAMUEL KRAMER.

For the highest records in Gymnasium Work,

Freshman Class, JOSEPH PORTER HARRIS.

HARRIET PELTON PERKINS SCHOLARSHIP:

For the highest record in English,

PAUL RUSSELL POPE.

TWO-YEAR HONORS:

In Greek, ROSCOE MILLIKEN PACKARD.
In Latin, ARTHUR WILLIAM DAVIDSON,
ROSCOE MILLIKEN PACKARD.
In Mathematics, ARTHUR WILLIAM DAVIDSON,
ROSCOE MILLIKEN PACKARD.
In Chemistry, ARTHUR WILLIAM DAVIDSON.

SOCIETY OF THE ALUMNI.

President, A. C. LUDLOW, 1884.

Vice Presidents, N. S. BURTON, 1846.
C. L. CUTTER, 1864.

Recording Secretary, DR. F. K. SMITH, 1879.

Corresponding Secretary, E. S. MEYER, 1893.

Necrologist, D. T. THOMAS, 1885.

The College for Women

CALENDAR.

1897.		
23 Sept.	Thursday	First Term begins.
25 Nov.	Thursday	Thanksgiving Day.
23 Dec.	Thursday	Winter Recess begins.
1898.		
3 Jan.	Monday	Winter Recess ends.
27 Jan.	Thursday	Day of Prayer for Colleges.
28 Jan.	Friday	Examinations begin.
5 Feb.	Saturday	First Term ends.
7 Feb.	Monday	Second Term begins.
7-13 April	Thursday-Wednesday	Easter Recess.
30 May	Monday	Memorial Day.
10 June	Friday	General Examinations begin.
19 June	Sunday	Baccalaureate Sermon.
21 June	Tuesday	COMMENCEMENT.
23-24 June	Thursday-Friday	Examinations for Admission.

SUMMER VACATION OF THIRTEEN WEEKS.

22 Sept.	Thursday	First Term begins.
24 Nov.	Thursday	Thanksgiving Day.
22 Dec.	Thursday	Winter Recess begins.
1899		
4 Feb.	Saturday	First Term Ends.

The College for Women.

THIS Department of Western Reserve University was opened in September, 1888. Whatever advantages a new college may possess, it has had; and yet, as a part of the University, it has profited from the first by the accumulated wisdom and shared the prestige of an educational foundation going back to the year 1826. The College has the advantages of separate education, since its students are free from constant association with young men in class room and lecture halls. It has the advantages of co-education, since its intimate relations with Adelbert College (for men) involve a common standard of work, and the relations of each to the other and to the rest of the University, tend to develop a common breadth of outlook. The College for Women is not an annex to Adelbert College. Each of the two has a faculty of its own, but, by exchange of work and other arrangements, instruction is given in each by members of the faculty of the other. In this way the number of instructors in many of the courses is practically doubled. Graduates of the College for Women receive their degrees from the University, of which it is an integral part. The system is thus neither one of co-education, nor of complete separation, but of co-ordination in education.

The buildings, which are situated in the most attractive and healthful part of the city, were opened for use in September, 1892. The recitation hall, known from its donor as Clark Hall, was designed by Richard M. Hunt. It contains chapel, library, gymnasium and offices, in addition to recitation and study rooms. Guilford House was built as a home for students. Its plan provides suites of three rooms for two occupants, suites of two rooms for one occupant, or single rooms for a single occupant. The life in the House and in the whole College is founded upon the desire to give to each student such supervision as earnest and able young women absent from home should receive, and yet to subject no one to unnecessary or annoying restraint. Certain members of the faculty reside in the House. To them, to the Housemistress, and to representatives of the Faculty, of the Advisory Council, and of the students, is specially committed the duty of making life in the House sensible, true and good. The aim of the house-keeping is to make all surroundings and conditions as homelike as may be. The house is warmed by hot water, is lighted both by gas and study lamps, and is thoroughly ventilated.

While not denominational, it is hardly necessary to say that in every purpose and aim the College is Christian.

ADVISORY COUNCIL.

PRESIDENT:
MRS. SAMUEL MATHER.

VICE-PRESIDENT:
MRS. JAMES J. TRACY.

SECRETARY:
MISS MARY L. SOUTHWORTH.

MRS. EDWARD W. MORLEY,
MRS. HENRY S. SHERMAN,
MISS HARRIET SHELDON HURLBUT,
MISS HARRIET L. KEELER,
MISS ELLEN G. REVELEY,
MRS. J. H. WADE,
MRS. CHARLES J. SHEFFIELD,
MRS. LUKE LASCELLES,
MISS HELEN L. STORKE,
MISS AUGUSTA MITTELBERGER,
MISS L. T. GUILFORD,
MRS. PASCAL H. SAWYER,
MRS. WORCESTER R. WARNER,
MRS. C. F. OLNEY,
MRS. W. S. TYLER,
MRS. GEORGE A. GARRETSON,
MISS MARY E. SPENCER,
MRS. JAMES PICKANDS,
MRS. WILLIAM A. LEONARD,
MRS. D. Z. NORTON,
MRS. H. E. MYERS,
MISS ANNA BURGESS,
MISS HELEN M. SMITH, President of the Alumnæ Association,
MRS. DUDLEY P. ALLEN,
MRS. EDWARD W. HAINES.

CORRESPONDING MEMBERS.

Mrs. Wm. H. Upson, Akron, O.
Mrs. C. W. Jacques, Ashtabula, O.
Mrs. John Sherman, Mansfield, O.
Mrs. J. Osborne Moss, New York.
Mrs. James A. Garfield, Mentor, O.
Mrs. H. S. Lane, Crawfordsville, Ind.
Mrs. C. O. Gridley, Erie, Pa.
Mrs. Thomas Kilpatrick, Omaha, Neb.
Mrs. G. H. McElevy, Youngstown, O.
Mrs. Henry B. Perkins, Warren, O.
Mrs. Frank Swayne, Toledo, O.
Mrs. J. S. Newberry, Detroit, Mich.
Mrs. Wm. E. Moore, Columbus, O.
Mrs. Frank G. Sigler, Brooklyn, N.Y.
Mrs. Joseph Howells, Jefferson, O.
Mrs. George H. Ely, Elyria, O.

FACULTY AND INSTRUCTORS.

Arranged with the exception of the President, in the order of college graduation.

CHARLES FRANKLIN THWING, D. D., LL. D., *President*, 55 Bellflower Av.

A. B., Harvard Coll., 1876; Andover Theological Seminary, 1876-79; D. D., Chicago Theological Seminary, 1888; LL. D., Illinois Coll. and Marietta Coll., 1894; President Adelbert Coll. and Western Reserve Univ., 1890—

HIRAM COLLINS HAYDN, D. D., LL. D., 1599 Euclid Av.

Instructor in Biblical Literature
(on the Florence Harkness Foundation).

A. B., Amherst Coll., 1856; D. D., Wooster, 1878; LL. D., Amherst Coll. and Marietta Coll., 1888; President Adelbert Coll. and Western Reserve University, 1888-90; Vice President Board of Trust, 1890—

MARY NOYES COLVIN, PH. D., Guilford House

Professor of Romance Languages.

Mt. Holyoke Seminary, 1868-72; Paris, 1874-75; Instructor in French and Latin, Worcester High School, 1877-80; Lady Principal of Genesee (N. Y.) State Normal School, 1881-83; Zurich and Geneva, 1884-87; Ph. D., University of Zurich, 1888. The Sorbonne, L'Ecole des Hautes Etudes, L'Ecole de Chartes, College de France, 1888-89; Secretary Bryn Mawr Preparatory School, Baltimore, 1889-93; Italy and Spain, 1893-94; Professor of Romance Languages, College for Women, 1893—

EMMA MAUD PERKINS, A. B., 121 Adelbert St.

Professor of Latin (on the Emily A. Woods Foundation).

A. B., Vassar Coll., 1879; Instructor in Classics, Central High School, Cleveland, 1879-92; Associate Professor of Latin, College for Women, 1892-93; Professor of Latin, 1893—

STEPHEN FRANCIS WESTON, A. M., 102 Adelbert St.

Associate Professor of Political and Social Science.

A. B., Antioch Coll., 1879; A. M., 1885; Univ. of Mich., 1885-87; School of Political Science, Columbia Coll., 1890-92; Assistant in Economics, Columbia Coll., 1892-94; Associate Professor of Political and Social Science, College for Women, 1894—

HAROLD NORTH FOWLER, PH. D., 19 Cutler St.

Professor of Greek (on the Eliza Clark Foundation).

A. B., Harvard Coll., 1880; Classical Master in Marston's University School, Baltimore, 1880–82; Johns Hopkins Univ., 1880–81; American School of Classical Studies in Athens, 1882–83; Univ. of Berlin, 1883–84; Univ. of Bonn, 1884–85; Ph. D., 1885; Instructor in Greek, Latin and Archæology, Harvard Coll., 1885–88; Instructor in Latin, Phillips Exeter Acad., 1888–90; Professor of Latin, Phillips Exeter Acad., 1890–92; Professor of Greek, Univ. of Texas, 1892–93; Professor of Greek, College for Women, 1896—

HENRY PLATT CUSHING, M. S., 260 Sibley St.

Professor of Geology.

Ph. B., Cornell Univ., 1882; Cornell Univ., 1882–83; School of Mines, Columbia Coll., 1883–84; Cornell Univ., 1884–85; M. S., 1885; Instructor in Geology, Chemistry and Physics, State Normal School, Mankato, Minn., 1885–91; Univ. of Munich, 1891–92; Instructor in Geology and Chemistry, College for Women, 1892–93; Associate Professor of Geology, 1893–95; Professor of Geology, 1895—

HENRY ELDRIDGE BOURNE, B. D., *Registrar*, 27 Cutler St.

Professor of History.

A. B., Yale Coll., 1883; Principal High School, Thomaston, Ct., 1883–84; B. D., Yale Divinity School, 1887; Hooker Fellow, Yale Divinity School, 1887–88; Teacher of History and Psychology, Norwich (Ct.) Free Acad., 1889–92; Professor of History and Instructor in Philosophy, College for Women, 1892–93; Professor of History, 1893—

ROBERT WALLER DEERING, PH. D., 80 Cornell St.

Professor of Germanic Languages and Literature.

Centre Coll., 1879–80; Vanderbilt Univ., 1880–85; A. M., 1885; Instructor in German, Vanderbilt Univ., 1885–86; Univ. of Leipzig, 1886–89; Ph. D., 1889; Adjunct Professor of Germanic Languages and Literature, Vanderbilt Univ., 1889–92; Professor of Germanic Languages and Literature, College for Women, 1892—

ALMA BLOUNT, PH. D., Guilford House

Instructor in English.

B. S., Wheaton Coll., 1886; A. B., 1890; Instructor in English, 1886–93; Cornell University, 1893–94; Scholar in English Philology, 1894–95; Fellow in English, 1895–96; Ph. D., 1896; Instructor in English, College for Women, 1896—

HERBERT AUSTIN AIKINS, PH. D., 25 Cutler St.

Professor of Philosophy.

A. B., Univ. of Toronto, 1887; Instructor, Univ. of Southern California, 1888; Yale Univ., 1888–91; Lecturer on History of Philosophy, Yale Univ., 1890–91; Ph. D., Yale, 1891; Professor of Logic and Philosophy, Trinity Coll., N. C., 1891–93; Honorary Fellow Clark Univ., 1892–93; Professor of Philosophy, College for Women, 1893—

ANNA HELENE PALMIÉ, PH. B., 56 Mayfield St.

Professor of Mathematics.

Ph. B., Cornell Univ., 1890; Fellow in Mathematics, 1890–91; Instructor in Mathematics and German, College for the Training of Teachers, New York City, 1891–92; Instructor in Mathematics, College for Women, 1892–93; Associate Professor of Mathematics, 1893–95; Professor of Mathematics, 1895—

WILLIAM HENRY HULME, PH. D., 95 Cornell St.

Associate Professor of English.

A. B., Vanderbilt Univ., 1890; Assistant in Greek, 1889–90; Univ. of Leipzig, 1891–92; Univ. of Jena, 1892–93; Univ. of Freiburg, 1893–94; Ph. D., 1894; Instructor in German, College for Women, 1894–96; Associate Professor of English, 1896—

ROBERT MACDOUGALL, PH. D., 102 Adelbert St.

Associate Professor of Pedagogy.

A. B., McGill Univ., 1890; Harvard Univ., 1892–95; A. M., 1893; Morgan Fellow, 1894; Ph. D., 1895; Walker Fellow, 1895–96; Univ. of Berlin and Sorbonne, 1895–96; Instructor in Philosophy, Adelbert Coll., 1896–97; Associate Professor of Pedagogy, College for Women, 1897—

EDWARD STOCKTON MEYER, JR., PH. D., 844 Logan Av.

Instructor in German.

B. L., Adelbert Coll., 1893; Univ. of Leipzig, 1893–94; Univ. of Heidelberg, 1894–96; Ph. D., 1896; Instructor in German, College for Women, 1896—

ELLA JANE MORSE, Guilford House.

Instructor in Gymnastics.

Anderson Normal School of Gymnastics, 1892–94; Instructor in Gymnastics, College for Women, 1894—

CHARLES P. FAGNANI, D. D., New York City.

Lecturer on the Bible (on the Florence Harkness Foundation).

ALLEN DUDLEY SEVERANCE, M. A., B. D., 605 Woodland Av.

Assistant in History.

B. A., Amherst Coll., 1889; Oberlin Theological Seminary, 1890–92; B. D., Hartford Theological Seminary, 1893; Universities of Halle, Berlin, and at Paris, 1893–97; M. A., Amherst College and B. D., Oberlin Theological Seminary, 1896; Assistant in History, College for Women, 1897—

JESSIE BOGGS, A. M., M. D., 1257 Euclid Av.

Lecturer on Hygiene.

B. S., Muskingum Coll., 1884; M. D., Woman's Medical Coll., Chicago, 1889; A. M., Wittenberg Coll., 1892; Lecturer on Hygiene, College for Women, 1890—

SARAH ALVIRA ADAMS, A. B., Cor. Euclid and Waymore Avs., E. C.
Assistant in English.

A. B., College for Women, 1896.

NINA MAY ROBERTS, A. B., 30 Sayles St.
Assistant in English.

A. B., College for Women, 1897—

CAROLINE ELMINA WATERS, PH. B.
Librarian in Clark Hall.

A. B., College for Women, 1897—

MISS ELIZABETH CURRIER ANNIN, *Housemistress*, Guilford House.

Additional instruction in their own departments is given by the following members of the Adelbert College Faculty.

LEMUEL STOUGHTON POTWIN, D. D., Absent for the year.
Professor of the English Language and Literature.

A. B., Yale Coll., 1854; Tutor in Yale, 1858–60; D. D., Yale, 1886; Professor of Latin, Western Reserve Coll. and Adelbert Coll., 1871–92; Professor of English, 1892—

EDWARD WILLIAMS MORLEY, M. D., PH. D., LL. D., 2238 Euclid Av.
Hurlbut Professor of Natural History and Chemistry.

A. B., Williams Coll., 1860; Professor of Chemistry, Western Reserve Coll. and Adelbert Coll., 1869—

FRANK PERKINS WHITMAN, A. M., 79 Adelbert St.
Perkins Professor of Physics and Astronomy.

A. B., Brown Univ., 1874; A. M., 1877; Brown Univ., 1879; Johns Hopkins Univ., 1879–80; Professor of Physics, Rensselaer Polytechnic Inst., 1880–85; Professor of Physics, Adelbert Coll., 1885—

CHARLES HARRIS, PH. D., 21 Cutler St.
Professor of German.

A. B., Indiana Univ., 1870; Ph. D., Univ. of Leipzig, 1883; Instructor in German, Academic Department of Vincennes Univ., 1883–86; Professor of French and German, Southern Illinois State Normal School, 1886–88; Professor of German, Oberlin Coll., 1888–93; Professor of German, Adelbert Coll., 1893—

FREDERICK MORRIS WARREN, PH. D., 6 Hayward St.
Professor of Romance Languages.

A. B., Amherst Coll., 1880; Instructor in Modern Languages, Western Reserve Coll. and Adelbert Coll., 1881–83; Sorbonne, 1884–86; Instructor and Associate in Modern Languages, Johns Hopkins Univ., 1886–91; Ph. D., Johns Hopkins Univ., 1887; Professor of Romance Languages, Adelbert Coll., 1891—

FRANCIS HOBART HERRICK, PH. D., D. SC., 7 Cutler St.

Professor of Biology.

A. B., Dartmouth Coll., 1881; Ph. D., Johns Hopkins Univ., 1888; D. Sc., Western Univ. of Pennsylvania, 1897; Instructor in Biology, Adelbert Coll., 1888–91; Professor of Biology, 1891—

SAMUEL BALL PLATNER, PH. D., (Absent for the year.)

Professor of Latin and Instructor in Sanskrit.

A. B., Yale Coll., 1883; Ph. D., 1885; Instructor in Latin and French, Adelbert Coll., 1885–90; Univ. of Berlin and Rome, 1889–90; Assistant Professor of Latin, Adelbert Coll., 1890–92; Professor of Latin, 1892—

ABRAHAM LINCOLN FULLER, PH. D., 45 Wilbur Pl.

Professor of Greek.

A. B., Dartmouth Coll., 1885; A. M., 1888; Univ. of Leipzig, 1885–87; Univ. of Erlangen, 1887–88; Ph. D., 1888; Instructor in Latin and French, Adelbert Coll., 1889–90; Professor of Greek, College for Women, 1890–93; Professor of Greek, Adelbert Coll., 1893—

VERNON JUDSON EMERY, A. M., 8 Adelbert Hall.

Instructor in Latin.

A. B., Ohio State Univ., 1887; Instructor in Latin, Univ. of Nebraska, 1888–91; A. M., Univ. of Nebraska, 1890; Univ. of Berlin, 1891–92; Assistant in Latin, Ohio State Univ., 1892–93; Assistant in Latin, Univ. of Chicago, 1893–94; Instructor in Latin, Adelbert Coll., 1894—

EDWIN VERNON MORGAN, A. M., 14 Adelbert Hall.

Instructor in History (on the Haydn Foundation).

A. B., Harvard Coll., 1890; A. M., 1891; Universities of Berlin and Oxford, 1891–92; Assistant in History and Proctor, Harvard Coll., 1892–94; Univ. of Berlin, 1894–95; Instructor in History, Adelbert Coll., 1895—

HIPPOLYTE GRUENER, PH. D., 6 Adelbert Hall.

Instructor in Chemistry.

A. B., Yale Coll., 1891; Ph. D., 1893; Instructor in Chemistry and Physics, Hill School, Pottstown, Pa., 1893–94; Univ. of Munich, 1894–95; Instructor in Chemistry, Adelbert Coll., 1895—

HERBERT TETLOW, M. L., 12 Adelbert Hall.

Assistant in Biological Laboratory.

B. L., Dartmouth, 1893; Assistant in Biological Laboratory, Dartmouth, 1894–95; Assistant in Biological Laboratory, Adelbert College, 1895–97; M. L., Dartmouth, 1896; Assistant in Biology, Adelbert, 1897—

STUDENTS.

[Students whose names are not marked with a * or a † are pursuing the Classical course. Places of preparatory study are mentioned below the students' names.]

SENIORS.

Agnes Adams — *Euclid*
East Cleveland High School.

†Ida Martha Austin — *Cleveland* — 1257 Broadway.
Ohio Wesleyan University.

†Isabel Kempton Bentley — *Cleveland* — 32 Mayfield Road.
Hillsdale College.

†Elsie May Brown — *Cleveland* — 125 Adelbert St.
Rayen School, Youngstown; Akron High School.

*Charlotte Marion Bush — *West Haven, Ct.* — Guilford House.
West Haven High School and Norwich, Ct., Free Academy.

†Louise Claflen — *Cleveland* — 446 Dunham Av.
Cleveland Central High School.

†Bessie Davidson — *Cleveland* — 145 Bellfield Av.
Columbus Central High School.

*Inez Maria Eccleston — *Cleveland* — 897 Fairmount St.
Cleveland Central High School.

*Edith Bigelow Gates — *Cleveland* — 193 Sawtell Av.
Cleveland Central High School.

Mary Lorenda Gibbons — *Warren* — 625 Clark Av.
Warren High School.

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*Modern Language Course.
†Latin-English Course.

†Belle Maud Goldsmith	*Cleveland* Cleveland Central High School.	191 Kennard St.
Anna Louise MacIntyre	*Cleveland* Cleveland Central High School.	136 Sawtell Av.
Emma Bentley Parks	*Collinwood* Shaw Academy.	Guilford House.
*Bona Ida Spenzer	*Cleveland* Cleveland Central High School.	925 Doan St.
†Florence Mabel Tiffany	*Cleveland* Cleveland Central High School.	977 Doan St.
†Maude Orton Truesdale	*Cleveland* Cleveland Central High School.	257 Kennard St.
Marian Warner Wildman	*Norwalk* Norwalk High School.	Guilford House.
Grace Stone Zorbaugh	*Council Bluffs, Ia.* Parsons College.	Guilford House.

SENIORS, 18.

*Modern Language Course.
†Latin-English Course.

JUNIORS.

Sarah Amanda Babbitt	*Cleveland* Warren High School.	Guilford House.
*Sadie Marcia Baum	*Cleveland* Cleveland Central High School.	1012 Detroit St.
*Mary Rippey Beck	*Cleveland* Findlay High School.	308 Hough Av.
Mabel Elizabeth Beeman	*Cleveland* Cleveland Central High School.	46 Collins Place.
Cornelia Bultman	*Cleveland* Cleveland Central High School.	49 Vienna St.
Helen Antoinette Carroll	*Cleveland* Cleveland Central High School.	1282 Woodland Av.
Vanche Belle Carroll	*Cleveland* Western Reserve Academy.	48 Brookfield St.
Alice Lucia Coburn	*Cleveland* Oberlin College.	455 Franklin Av.
*Florence Anna Craft	*Cleveland* Cleveland Central High School.	130 Wilbur Place.
†Julia Fenn	*Tallmadge* Cleveland Central High School.	774 Doan St.
Lucy Gale	*Flat Rock, N. C.* Middletown, Ct., High School.	822 Doan St.
*Anna Gill	*Cleveland* Cleveland Central High School.	434 Kennard St.
†Mabel Amanda Guild	*Cleveland* Cleveland West High School.	98 Murray Hill.

*Modern Language Course.
†Latin-English Course.

Lura Lowell Haupt	*Cleveland*	681 E. Prospect St.
	Cleveland Central High School.	
Edith Annette Hughes	*Cleveland*	836 Willson Av.
	Cleveland Central High School.	
*Helen Ashley Hunt	*New Milford, Ct.*	Guilford House.
	Ingleside School, New Milford.	
Cora LaVon King	*Sandusky*	Guilford House.
	Oberlin Academy.	
*Caroline McQuiston	*Cleveland*	19 Walker St.
	Cleveland South High School.	
*Winifred Margaret Manlove	*Cleveland*	114 Murray Hill.
	Cleveland Central High School.	
†Helen Louise Peck	*Cleveland*	28 Walker St.
	Cleveland South High School.	
May Pickard	*Cleveland*	1423 E. Madison.
	Central High School.	
†Ida Jane Prall	*Cleveland*	1050 First Av.
	Cleveland Central High School.	
†Elsie Mae Quiggle	*Chardon*	100 Brookfield St.
	Chardon Public School.	
†Antoinette Augusta Ranney	*Mulberry Corners*	22 Anndale St.
	Willoughby High School.	
Gertrude Almira Sanderson	*Cleveland*	166 Sawtell Av.
	Cleveland Central High School.	
†Marian Eleanor Stockwell	*New Philadelphia*	43 Dorchester Av.
	New Philadelphia High School and Franklin College.	
Millicent Augusta Swain	*Cleveland*	902 Prospect St.
	Cleveland Central High School.	

*Modern Language Course.
†Latin-English Course.

Minnie Mabel Tanner	*Cleveland*	25 Linwood St.
	Cleveland Central High School.	
†Edith Mary Teagle	*Cleveland*	37 Ensign St.
	Cleveland Central High School.	
*Miriam Louise Thomas	*Youngstown*	Guilford House.
	Rayen School, Youngstown.	
†Alice Jane Tozer	*Cleveland*	60 Penrose Av.
	Cleveland Central High School.	
Sarah Lucile Trowbridge	*Hudson*	98 Murray Hill Av.
	Western Reserve Academy, Hudson.	
*Jessie Martha Turney	*Painesville*	Guilford House.
	Painesville High School.	
†Rose Amelia Wolcott	*Cleveland*	91 Lake St.
	Cleveland Central High School.	

JUNIORS, 34.

*Modern Language Course.
†Latin-English Course.

SOPHOMORES.

Esther Tuckerman Allen	*Salt Lake City, Utah*	Guilford House.
Salt Lake Academy and New Lyme Institute.		
Alice Henrietta Andrus	*Cleveland*	128 Sibley St.
Cleveland Central High School.		
*Myrtle W. Baer	*Milwaukee, Wis.*	Guilford House.
East Milwaukee High School.		
†Grace Mabel Bramley	*Chagrin Falls*	98 Murray Hill.
Baldwin University, Preparatory Department.		
Emma Brush	*Cleveland*	166 Quincy St.
Cleveland Central High School.		
*Mabel Spence Croxton	*Cleveland*	44 Fifth Av.
Cleveland Central High School.		
Bertha Muller Dillow	*Cleveland*	Guilford House
Cleveland West High School.		
Cora Frances Dissette	*Glenville*	
Western Reserve Academy.		
*Isabel Hannah Dunham	*Cleveland*	388 Dunham Av.
Cleveland Central High School.		
†Ethel Eudora Emery	*Cleveland*	2036 Broadway.
Cleveland South High School.		
Mary Louise Eshenour	*Geneva, N. Y.*	Guilford House.
Geneva High School.		
Helen Perry Foote	*Cleveland*	Guilford House.
Cleveland West High School.		
†May Lavina Garfield	*Cleveland*	1646 Harvard St.
Cleveland South High School.		
Jessie Eunice Graham	*East Cleveland.*	
East Cleveland High School.		
*Edith Butler Gwin	*New Albany, Ind.*	44 Brenton St.
New Albany High School.		
*Mabel May Hanson	*Cleveland*	Guilford House.
Cleveland South High School.		

*Modern Language Course.
†Latin-English Course.

*Harriet Augusta Jones	*Cleveland* Cleveland South High School.	1635 Harvard St.
Laura Josephine King	*Painesville* Lake Erie Seminary.	Guilford House.
Muriel Kinney	*Cleveland* Private Tuition.	266 Harkness Av.
†Cornelia Platt Lane	*Toledo* Shepardson College.	Guilford House.
*Phoebe Mary Luehrs	*Cleveland* Cleveland Central High School.	580 Willson Av.
†Vivian Helen Maynard	*Glenville* Miss Mittleberger's School.	
†Ida May Mendenhall	*Collinwood* Collinwood High School.	54 Laurel Av.
*Ena Grace Mills	*Cleveland* Cleveland Central High School.	52 Lockwood Av.
Martha Barbara Mong	*Massillon* Western Reserve Academy.	Guilford House.
*Josephine Munhall	*Cleveland* Cleveland Central High School.	525 Case Av.
†Fannie Elizabeth Nichols	*Zanesville* Zanesville Ladies' Seminary.	Guilford House.
*Gertrude May Robertson	*Cleveland* Cleveland Central High School.	1094 First Av.
*Nellie Belle Rogers	*Binghamton, N. Y.* Binghamton Central High School.	Guilford House.
Eva Russell	*Cleveland* Cleveland South High School.	1812 Harvard St.
*Bertha Veronica Stevens	*Cleveland* Hathaway-Brown School: Rye Seminary.	723 North Logan Av.
*Winifred Alice Storer	*Cleveland* Cleveland Central High School.	95 Ingleside Av.
Olive Margueritte Whitworth	*Cleveland* Cleveland South High School.	61 Gorman Av.

SOPHOMORES, 33.

*Modern Language Course.
†Latin-English Course.

FRESHMEN.

†Edith Inez Beman	*Cleveland* Cleveland South High School.	29 McConnell St.
Maud Elizabeth Benfield	*Cleveland* Cleveland Central High School.	25 White Av.
*Helen Pond Bowen	*Elyria* Elyria Public School.	Guilford House.
†Grace May Bradlee	*Cleveland* Cleveland Central High School.	1327 Cedar Av.
Hattie C. Carpenter	*Cleveland* Baldwin University.	181 Kenilworth St.
*Bessie Maude Chase	*Cleveland* Chardon High School.	1201 Euclid Av.
*Mabel Eugenia Corll	*Youngstown* Rayen School, Youngstown.	Guilford House.
*Ruth Rozelle Cummings	*St. Louis, Mo.* St. Louis High School.	50 Wilbur Place.
*Alice Greenwood Derby	*Columbus* Columbus High School.	Guilford House.
Myrtle Elizabeth Dever	*Wellsville* Wellsville High School.	Guilford House.
†Alice Doyle Drake	*Cleveland* Cleveland Central High School.	336 Bolton Av.
Mabel Hope Dunsford	*Avon, N. Y.* Avon High School.	Guilford House.
*Cora Harriet Elwell	*Lakewood* Lake Erie Seminary.	
†Elsie May Holliday	*Cleveland* Cleveland Central High School.	520 Prospect St.
Pearl Irene Horton	*Cleveland* Cleveland Central High School.	16 Quimby Av.
†Ruth Mildred Hubbell	*Cleveland* Cleveland West High School.	Guilford House.

*Modern Language Course.
†Latin-English Course.

Maud Florence Hunt	*Cleveland*	173 Bell Av.
	Oxford Academy, Brockport Normal School.	
Winifred Newton Jones	*Cleveland*	1635 Harvard St.
	Cleveland South High School.	
*Louise Karger	*Cleveland*	Bellevue Hotel.
	Hughes High School.	
*Selma Virginia Kline	*Cleveland*	1237 Slater Av.
	Cleveland West High School.	
Florence May Knowles	*Cleveland*	1034 E. Madison Av.
	Cleveland West High School.	
*Martha Marie Lueke	*Cleveland*	708 Willson Av.
	Cleveland Central High School.	
*Blanche Estelle Luster	*East Cleveland*	East Cleveland.
	East Cleveland High School.	
†Elizabeth Anastatia McGorey	*Cleveland*	235 Lincoln Av.
	Cleveland Central High School.	
†Stella Stanley McKee	*Cleveland*	11 Cutler St.
	Cleveland Central High School.	
†Eleanor Elizabeth Magruder	*Port Clinton*	Guilford House.
	Port Clinton High School.	
*Ida Catherine Messer	*Egg Harbor City, N. J.*	244 Becker Av.
	Private Instruction.	
†Rebecca Millikin	*North Bloomfield*	9 Melvin St.
	North Bloomfield High School.	
†Maude Virginia Palmer	*Willoughby*	69 Lincoln Av.
	Willoughby High School.	
Ethel May Parmenter	*Cleveland*	80 Bell Av.
	Cleveland Central High School.	
Helen May Pelton	*Cleveland*	11 Cutler St.
	Cleveland West High School.	
*Myra Phelps	*Cleveland*	427 Russell Av.
	Hathaway-Brown School.	

*Modern Language Course.
†Latin-English Course.

†Alice Winifred Riggs	*Pittsburgh* Pittsburgh Central High School.	41 Cornell St.
*Viola L. Roth	*Toledo* Toledo High School.	Guilford House.
Martha Ella Rukenbrod	*Cleveland* Private Instruction.	86 Quincy St.
Mary Etta Rukenbrod	*Cleveland* Private Instruction.	86 Quincy St.
†Eunice Schenck	*Cleveland* Cleveland Central High School.	78 Portland St.
Alice Elizabeth Shanks	*Cleveland* Cleveland South High School.	2431 Broadway.
†Norma Jeanette Smith	*Willoughby* Willoughby High School.	Guilford House.
Maud Stiles	*Delaware* Delaware High School.	Guilford House.
†Winifred Worswick Stowe	*Marion* Harcourt Place, Gambier.	Guilford House.
*Helen Electa Thomas	*Cleveland* Hathaway-Brown School.	834 Willson Av.
*Marguerite Livingston Thomas	*Cleveland* Hathaway-Brown School.	834 Willson Av.
Mary Butler Thwing	*Cleveland* Cleveland Central High School.	55 Bellflower Av.
†Cora Martha Webber	*Cleveland* Private Instruction.	401 Case Av.
†Emma White	*Cleveland* Cleveland Central High School.	1092 First Av.
†Harriet Amanda Whiteside	*Cleveland* Cleveland Central High School.	14 Melvin St.
*Myrtle May Wiser	*Cleveland* Cleveland Central High School.	1014 Ansel Av.

FRESHMEN, 48.

*Modern Language Course.
†Latin-English Course.

STUDENTS PURSUING PARTIAL COURSES.

FOURTH YEAR.

Sarah Gertrude Hadlow	*Cleveland* West High School.	164 Pelton Av.
Sarah Louise Lewis	*Cleveland* Cleveland Central High School.	65 Bolton Av.
Bertha Louise Torrey	*East Cleveland* Wellesley College.	

THIRD YEAR.

Annie Spencer Cutter	*Cleveland* Cleveland Central High School.	1174 E. Madison Av.
Grace Lottie Oviatt	*Cleveland* Cleveland Central High School.	761 Genesee Av.

SECOND YEAR.

Grace Moreland Henderson	*East Cleveland* Miss Mittleberger's School.	

FIRST YEAR.

Anna S. Brewbaker	*Plymouth* Plymouth High School.	442 Sibley St.
Mabel Alnette Denis	*Cleveland* Cleveland Central High School.	42 Streator Av.
Ora Lindsey Jones	*Cleveland* Kinsman High School.	9 Melvin St.
Cora Louise Kauffman	*Miamisburg* Miamisburg High School.	104 Irvington St.
Florence Marsh Lower	*Lakewood* Miss Phelps' Classical and English School.	Guilford House.
Mary Louise Smith	*Cleveland* Cleveland Central High School.	84 Edgewood Pl.
Charlotte Young	*Fairmount* East Cleveland High School.	

STUDENTS PURSUING SPECIAL COURSES, 13.

TOTAL NUMBER OF STUDENTS, 146.

REQUIREMENTS FOR ADMISSION.

CLASSICAL COURSE.

ENGLISH: The examination will consist of two parts. The student will be required to write two essays, of three hundred words each, on subjects chosen from the books marked A in the following lists. She will also be required to answer questions on the books marked B. These questions will relate to the author, subject matter, grammatical and rhetorical peculiarities, and will imply minute and critical study.

1898: *A.* Milton's Paradise Lost, Books I and II; Pope's Iliad, Books I and XXII; The Sir Roger de Coverley Papers in the Spectator; Goldsmith's Vicar of Wakefield; Coleridge's Ancient Mariner; Southey's Life of Nelson; Carlyle's Essay on Burns; Lowell's Vision of Sir Launfal; Hawthorne's House of the Seven Gables. *B.* Shakespeare's Macbeth; Burke's Speech on Conciliation with America; De Quincey's Flight of a Tartar Tribe; Tennyson's Princess.

1899: *A.* Dryden's Palamon and Arcite; Pope's Iliad, Books I, VI, XXII and XXIV; The Sir Roger de Coverley Papers in the Spectator; Goldsmith's Vicar of Wakefield; Coleridge's Ancient Mariner; DeQuincey's Flight of a Tartar Tribe; Cooper's Last of the Mohicans; Lowell's Vision of Sir Launfal; Hawthorne's House of the Seven Gables. *B.* Shakespeare's Macbeth; Burke's Speech on Conciliation with America; Milton's Paradise Lost, Books I and II; Carlyle's Essay on Burns.

1900: *A.* Dryden's Palamon and Arcite; Pope's Iliad, Books I, VI, XXI and XXII; Goldsmith's Vicar of Wakefield; Scott's Ivanhoe; DeQuincey's Flight of a Tartar Tribe; Cooper's Last of the Mohicans; Tennyson's Princess; Lowell's Vision

of Sir Launfal. *B.* Shakespeare's Macbeth; Milton's Paradise Lost, Books I and II; Burke's Speech on Conciliation with America; Macaulay's Essays on Milton and Addison.

NOTE: No pupil will be accepted whose writing is markedly deficient in spelling, punctuation, idiom, or division into paragraphs.

MATHEMATICS: Arithmetic, including the Metric System of Weights and Measures.

Algebra (Loomis, or Wells'), to the chapter on the Binomial Theorem.

Geometry, Plane and Solid (including Spherical).

LATIN: Grammar (Allen & Greenough); Roman pronunciation.

Cæsar—three books of the Gallic War, or two books of the Civil War.

Cicero—six orations, including De Imperio Gn. Pompeii.

Vergil—the Bucolics, and five books of the Æneid, *or*, six books of the Æneid.

Ovid—Translation at sight.

The translation at sight of passages from prose authors.

Prose Composition—rendering of simple English sentences into Latin.

History of Rome—Smith's Smaller History of Rome, or Creighton's Primer of Roman History may indicate the amount required.

Ancient Geography.

GREEK: Grammar; pronunciation as recommended on Page vii of the Preface to Goodwin's Greek Grammar.

Xenophon—four books of the Anabasis (for which one hundred and ten pages of Goodwin's Greek Reader will be considered as equivalent.)

Homer, three books of the Iliad, with Prosody.

The translation at sight of easy passages in Attic prose.

Prose Composition—The rendering into Greek of simple English sentences. White's First Lessons in Greek (complete), Woodruff's Exercises in Greek Prose Composition, or Jones' Exercises in Greek Prose (twenty-six exercises), are recommended.

History of Greece—Pennell's Ancient Greece or Oman's History of Greece, may indicate the amount required.

Ancient Geography.

Instead of Greek, and for admission to the Modern Language Course, may be offered the following in either French or German—

FRENCH : Ability to write simple sentences in French.

A thorough knowledge of French Grammar, special attention being paid to the verbs.

Ability to read ordinary French at sight.

The following course is advised :

First Year—French Grammar and exercises; irregular verbs; Super's French Reader; Halévy's L'Abbé Constantin.

Second Year—Grammar with Composition exercises from L'Abbé Constantin (Grandgent).

Sandeau's Mlle de La Seiglière, Hugo's Hernani, Daudet's Contes (Cameron's Edition).

Third Year—Review of Irregular verbs, with Composition exercises from La Belle Nivernaise.

Molière's Bourgeois Gentilhomme, or any other comedy of Molière.

Racine's Athalie, Corneille's Cid, Balzac's Eugénie Grandet.

GERMAN : Grammar, with translation at sight of easy German prose.

Prose Composition—the rendering of simple connected prose from English into German.

Ability to pronounce German and to recognize German words and simple phrases when uttered.

In addition, familiarity with the following works, or equivalents, is required:

Riehl—Der Fluch der Schönheit.

Freytag—Aus dem Staat Friedrichs des Grossen.

Heine—Die Harzreise.

Gœthe—First three books of Dichtung und Wahrheit.

Lessing—Minna von Barnhelm.

Schiller—Wilhelm Tell and Das Lied von der Glocke.

Thirty pages of lyrics or ballads.

Instead of Greek, and for admission to the Latin-English Course, may be offered:

CHEMISTY: Remsen's Chemistry, briefer course, or an equivalent.

PHYSICS: Appleton's School Physics, or an equivalent.

HISTORY: A general course, including the principal features of European history.

ADMISSION OF STUDENTS.

Students are admitted after passing examinations in the subjects stated on pp. 112 fll., or on the presentation of certificates of preparation. Those who wish to be examined during Commencement week should notify the Registrar before June 10. A second opportunity to attend examinations will be given at the opening of the first term, to those who apply for it before September 10.

All candidates for admission to the higher classes, whether from other colleges or not, may be required to pass examinations on the studies (or their equivalents) previously pursued by those classes in the college course, due regard being paid to such certificates as they bring from their previous instructors.

No one is admitted to the Senior class after the beginning of the second term.

Satisfactory written testimonials of good moral character are required in all cases, and applicants for admission to the higher classes, who come from other colleges, must present certificates of honorable dismission.

CERTIFICATES OF PREPARATION.—Students from such High Schools, Academies and Seminaries as may be approved by the Faculty, are admitted to College without examination, on the presentation of certificates that they have mastered the entire requisites for admission to the Freshman Class. Blank forms will be furnished instructors on application to the President, with whom they are invited to correspond. Applicants

for admission by certificate are requested to present their certificates, or send them by mail to the Registrar, during Commencement week, or as soon after as practicable.

When the above requirements have not been exactly met, the equivalents offered therefor must be specified in detail. When a certificate does not meet the above requirements *in full*, the applicant may be required to pass the usual examination in any or all of the requirements.

In the case of those received on certificate, the first term of the Freshman year will be regarded as probationary, and students manifestly deficient in preparation may be dropped at any time during the term.

COURSES OF STUDY.

FRESHMAN YEAR.

FIRST HALF-YEAR.

	Bible I	17 hours.
	English I	51 "
(1)	*Greek I.* (Classical Course). or *French III* or *German V.* (Modern Language Course) or *History I.* (Latin-English Course)	51 "
(2)	*French I.* or *German I.* { Classical Course / Modern Language Course / Latin-English Course }	51 "
	Hygiene (Lectures).	
	Latin I	51 "
	Mathematics I	51 "
		272 hours.

SECOND HALF-YEAR.

	Bible II	17 hours.
	English II	51 "
(1) (3)	*Greek II.* (Classical Course) or *French IV.* or *German VI.* (Modern Language Course) *History* or *Mathematics* (Latin-English Course)	51 "

(1) Modern Language students must continue during Freshman year the study of the modern language they offer as an entrance requirement.

(2) Classical students must take French or German in Freshman year. Modern Language students, entering college with French, must take German in Freshman year, and entering with German must take French in Freshman year. Latin-English students may choose a two years' course in either French or German, this course to begin in Freshman year. The language not chosen must be taken in Sophomore year.

(3) See statements of elective courses in History and Mathematics open to Latin-English Freshmen.

(2) *French II.* or *German II.*	Classical Course Modern Language Course Latin-English Course	51 hours
Latin II		51 "
Mathematics		51 "
		272 hours.

SOPHOMORE YEAR.

FIRST HALF-YEAR.

Bible III	17 hours.
French I. (Latin-English students taking 2 years' German). or *German I.* (Latin-English students taking 2 years' French).	51 "
French III. (Latin-English students taking 2 years' French). or *German III.* (Latin-English students taking 2 years' German).	51 "
History I. (Classical and Modern Language students)	51 "

Each student must take a sufficient number of elective courses to make, including the required courses..... 272 hours.

Students of the Sophomore and Junior classes are permitted to take 221 hours by arranging to do an additional amount of work equivalent to another course in one or more of the courses which make up the 221 hours.

SECOND HALF-YEAR.

French II. (Latin-English students taking 2 years' German). or *German II.* (Latin-English students taking 2 years' French).	51 hours.

(2) See note p. 115.

French IV. (Latin-English students taking 2 years' French). or *German IV.* (Latin-English students taking 2 years' German).	51 hours.

Logic ..... 34 hours.
Mechanics (Mathematics IV) ..... 34 "

Each student must also take a sufficient number of elective courses to make, including the required courses ..... 272 hours.

JUNIOR YEAR.

FIRST HALF-YEAR.

Bible IV ..... 17 hours.
Required Elective ..... 255 "

272 hours.

Students are required to take a course in at least two of the three sciences, BIOLOGY, CHEMISTRY and PHYSICS. Those who in their preparatory work have had adequate courses in Chemistry and Physics will take Chemistry II and Physics IIA, instead of Chemistry I and Physics I, if they take Chemistry or Physics.

SECOND HALF-YEAR.

Bible V ..... 17 hours.
Required Elective ..... 255 "

272 hours.

SENIOR YEAR.

FIRST HALF-YEAR.

Required Elective ..... 255 hours.

SECOND HALF-YEAR.

Required Elective ..... 255 hours.

Students of the Senior Class are permitted to take 204 hours by arranging to do an additional amount of work equivalent to another course in one or more of the courses which make up these 204 hours.

Students are required to take at least ONE elective course in either the department of ECONOMICS or the department of PHILOSOPHY.

SYNOPSIS OF COURSES.

The following statements include all courses offered, whether prescribed or elective. Each course consists of three weekly recitations of one hour each unless otherwise stated:

In making a choice of courses students are expected to confer with the President, Registrar, and members of the Faculty for advice and assistance.

Students must give to the Secretary of the Faculty written notice of their choice of electives for the second half-year of 1897-98, on or before January 22nd, 1898; for first half-year of 1898-99, on or before June 4th, 1898.

ART.

PROFESSOR FOWLER.

FIRST AND SECOND HALF-YEAR.

HISTORY OF ART. I. Ancient Art—Lectures and collateral reading—three times a week through the year. [Not given in 1897-98].

HISTORY OF ART. II. Post-classical Art; from the beginning of Christian Art through the period of the Renaissance—Lectures and collateral reading—three times a week through the year. [Not given in 1898–99].

ASTRONOMY.

PROFESSOR WHITMAN.

ELECTIVE COURSE.

SECOND HALF-YEAR.

The course is mainly descriptive, but the simpler problems of spherical astronomy are discussed. Text book, Young's General Astronomy.

THE BIBLE.

PRESIDENT THWING, III, IV, V.

DR. HAYDN, I, II.

Freshman Class.

FIRST HALF-YEAR.

I. THE OLD TESTAMENT.

SECOND HALF-YEAR.

II. I continued.

Sophomore Class.

FIRST HALF-YEAR.

III. THE LIFE OF CHRIST.

Junior Class.

FIRST HALF-YEAR.

IV. THE ACTS AND EPISTLES.

SECOND HALF-YEAR.

V. IV continued.

Owing to the Florence Harkness Foundation this department is not only becoming exceptionally well supplied with maps and books, but a series of lectures open to all the students is given each year by eminent persons from outside the University. In 1896–7 Dr. William H. Ward, of the Independent, delivered five lectures on the connection of Old Testament History with that of Egypt, Babylon, and Syria. In 1897–8 Professor Charles P. Fagnani, of Union Theological Seminary, will give a course of five lectures The Bible and its Interpretation, and it is expected that Professor George Adam Smith, of Free Church College, Glasgow, will give ten lectures in 1898–9.

BIOLOGY.

PROFESSOR HERRICK.

NOTE.—All courses in Biology are to be considered as three-hour courses, each consisting of three exercises—two laboratory exercises of two hours each, and one recitation.

SECOND HALF-YEAR.

Course I belongs to a group of three courses—Biology I, Chemistry I, Physics I—two of which are required of all students.

I. GENERAL BIOLOGY. This course in Elementary Biology forms an introduction to the study of living things from the basis of morphology, physiology and development. It is designed to illustrate by the study of a few organisms the fundamental facts of vital structure and function. The subject is treated as one discipline—the study of vital phenomena—, rather than as botany or zoology, for the more detailed study of which it prepares the student. It begins with the microscopical study of the cell, as illustrated by the simplest organisms, and by the tissues of higher animals and plants. This is followed by the study of mould-fungi, bacteria, algæ, and the principal chemical compounds which characterize living matter. A fern, taken as a representative of vegetal organisms is then studied in detail in regard to its structure, functions, and development, and its vital phenomena are compared with those of higher and lower forms. This course is concluded with the study of one or more animal types.

The student is required to make pictorial notes of her observations. Printed laboratory directions have been prepared and the following reference books are recommended: General Biology, Sedgwick & Wilson; Elementary Biology, Parker; Practical Biology, Huxley, Martin, Howes & Scott; Outlines of Classification and Special Morphology, Goebel; Lectures on the Physiology of Plants, Vines; Atlas of Biology, Howes. One recitation, two laboratory exercises of two hours each, second half Sophomore year.

ELECTIVE COURSES.

II. MAMMALIAN ANATOMY. This course begins with a general consideration of the structure, classification and development of Vertebrates. The mammalian type is studied upon one of the higher animals, as the rabbit. The comparative study of the hard parts and the mammalian skeleton is followed by the dissection of the more important organs. Each student will be required to make notes and drawings of some special dissection assigned to her during the course.

The following reference books are recommended: Osteology of the Mammalia, Flower; Quain's Anatomy, vol. II, part I,

Osteology; Comparative Anatomy of Vertebrates, and Lehrbuch der vergleichenden Anatomie der Wirbilthiere, Wiedersheim; Practical Zoology, Marshall and Hurst; Zootomy, T. J. Parker, and Dissection of the Dog, Howell; Dissection of the Cat, Gorham and Power; Anatomie des Kaninchens, Krause. One recitation, two laboratory exercises of two hours each, first half Senior year.

III. ANIMAL MORPHOLOGY. The work in this course will include the study of the structure, development and relationship of the principal types of invertebrate animals. Instruction will be given by means of lectures and laboratory work. Laboratory work will embrace the study of all or a part of the following organisms: Sycon and Leucon Sponges, Tubularian and Campanularian Hydroids; Alcyonorian Coral, Actinian, Sea Urchin, Star Fish, Holothurian, Planarian, Tapeworm, Earthworm, Nereis, Cladocera, Cyclops, Parasitic, Copepod, Barnacle, Isopod, Stomatopod, Macrouran and Brachyouran (Decapod), Limulus, Scorpio, Blatta, Anodon, Fulgur, Loligo (Squid), Salpa, Amphioxus, and a Teleost. One recitation, two laboratory exercises of two hours each, first half-year.

IV. ELEMENTS OF VERTEBRATE HISTOLOGY. This course consists in the preparation and microscopical examination of the tissues and organs of the body of man and higher vertebrates. Special attention will be given to the technical methods in microscopical anatomy, to preparing, staining and sectioning histological material. No student is admitted to this course who has not had preliminary training in general Biology. The principal reference books are: Normal Histology, Piersol; Microtomist's Vade-Mecum, Lee; Quain's Anatomy and Klein's Atlas of Histology. One recitation, two laboratory exercises of two hours each, second half Senior year.

V. VERTEBRATE EMBRYOLOGY. In this course a detailed study of the development of some vertebrate, such as the fowl, amphibian or fish, will be undertaken, and the student will learn how to prepare embryological material, and how to study it. The principal text books followed will be: Elements of Embryology by Foster and Balfour, Text Book of

the Embryology of Man and Mammals, Hertwig and Mark. Marshall's Vertebrate Embryology. One recitation, two laboratory exercises of two hours each, second half-year.—*Or*,

VI. BOTANY—VEGETABLE MORPHOLOGY. This course in structural or morphologial botany consists in a comparative study of the principal types of the lower and higher plants considered primarily with reference to their anatomy. Instruction is given by lectures and laboratory work. The following organisms illustrate the scope of this course: Ustilago, Cystopus (Rust), Aecidium (Cluster-cup fungus), Ulva, Hormactis, Monostroma; Bryopsis, Ectocarpus, Fucus, Sargassum, Callithamnion, Dasya (Algæ), Marchantia (Liverwort), Hypnum (Moss), Equisetum (Scouring rush), Pinus (Conifer), Trillium (Flowering plant). Toward the end of the session practical exercises will be held in the analysis and classification of flowering plants. The principal text-books used will be Outlines of Classification and Morphology of Plants by Goebel, and Text-book of Botany by S. H. Vines. One recitation, two laboratory exercises of two hours each, second half-year.

CHEMISTRY.

PROFESSOR MORLEY.

DR. GRUENER.

FIRST HALF-YEAR.

I. CHEMISTRY OF THE NON-METALLIC ELEMENTS. Wurtz's Elements of Chemistry. Two hours a week in recitation and one laboratory exercise of three hours.

Course I belongs to a group of three courses—Biology I, Chemistry I, and Physics I—two of which are required. Students who offer certificates of preparatory work in Chemistry will choose Chemistry II instead of Chemistry I.

II. INORGANIC CHEMISTRY. An advanced course designed for students entering with a preparation in Chemistry.

III. ORGANIC CHEMISTRY. Remsen's Organic Chemistry. Two recitations and one laboratory exercise of three hours. Open to those who have taken courses I and IV or courses II and IV. Students choosing this course will take Chemistry V.

SECOND HALF-YEAR.

IV. CHEMISTRY OF THE METALS. Wurtz's Elements of Chemistry. Two recitations and one laboratory exercise of three hours. Open to those who have taken Course I or Course II.

V. Course III continued.

VI. ELEMENTS OF QUALITATIVE ANALYSIS. Three laboratory exercises of three hours each.

ECONOMICS.

ASSOCIATE PROFESSOR WESTON.

All students are required to take at least one course in either this department or the department of philosophy. Those who elect economics are strongly advised to do so in the Junior year. Course I should be taken before electing any of the other courses. Courses III and IV will be given in alternate years.

ELECTIVE COURSES.

FIRST HALF-YEAR.

I. ELEMENTS OF ECONOMICS. The object of this course will be to make the student acquainted with the fundamental principles of Economics; while attention will be continually drawn to the bearings of certain economic doctrines upon the more important social and financial problems of to-day. Bullock's Political Economy will be used as the basis of study. A series of readings and papers on assigned subjects will be required. The text will be supplemented after the holidays by a special study of some of the more important economic questions.

II. ECONOMIC HISTORY. A study of the economic conditions and industrial development of England from the time of the Conquest, and of the United States chiefly since 1763. A general survey of the economic conditions prevailing on the Continent will be made from time to time in comparison with contemporaneous conditions in England. Beginning with the manor and guild systems, it will be the object of this course, by familiarizing the student with the history of

economic conditions, to convey a better appreciation of the social problems of to-day, for whose full understanding a study of industrial history is indispensible. Lectures and readings. Each student will be required to prepare a paper upon some subject to which she shall have given special study. Hours to be arranged.

SECOND HALF-YEAR.

III. SOCIAL PROBLEMS AND THEORIES OF THEIR SOLUTION.

(*a*) A brief study of the origin, aims and methods of trades unions, co-operative societies, profit-sharing, industrial arbitration, the eight hour movement, and the single tax theory.

(*b*) A history and criticism of the doctrines of those ideal social reforms which seek to change existing economic conditions and relations by more or less violent changes in the political structure of society—as socialism, communism, nihilism, and anarchism. Lectures, assigned readings and papers on special subjects.

IV. PAUPERISM AND CRIME: Their causes, methods of relief and prevention, considered historically, theoretically, and practically. Lectures, reports and papers.

V. CIVIL GOVERNMENT. A study of the national, state and municipal governments of the United States. Comparison will be made with other types and systems. Bryce's American Commonwealth (abridged edition), supplemented by readings, reports and lectures.

ENGLISH.

ASSOCIATE PROFESSOR HULME, XIII–XVI, XVIII–XXIII.
DR. BLOUNT, I–XII, XVII.

Freshman Class.

FIRST HALF-YEAR.

I. STUDY OF THE PRINCIPLES OF NARRATION AND DESCRIPTION. J. M. Hart's Handbook of English Composition is used as a text-book. The works of standard writers are studied from Brewster's Specimens of Narration and Baldwin's Specimens of Prose Description. Short papers each week and frequent essays.

SECOND HALF-YEAR.

II. THE PRINCIPLES OF EXPOSITION AND STUDY OF STYLE. Hart's Handbook, Lamont's Specimens of Exposition, and Minto's Manual of English Prose. Short papers each week and frequent essays.

ELECTIVES.

FIRST HALF-YEAR.

III. AMERICAN PROSE LITERATURE. The standard American prose writers are read; their style and material are compared with that of contemporary British authors; essays are written on subjects suggested by the reading.

V. NINETEENTH CENTURY BRITISH PROSE WRITERS. Study of style; essays.

VII. DEVELOPMENT OF ENGLISH PROSE. Critical reading of specimens of English prose from Mandeville to the present time. Also a historical and critical study of rhetorical theory; references to Greek, Roman, Mediaeval and Modern rhetoricians.

IX. LITERARY CRITICISM. The function and theory of criticism, as expounded by English critics of the present century. Reading of critical essays. Abstracts and essays by the students.

XI. DAILY THEMES. Special work arranged for each student. The instructor will meet each student one period a week for private criticism.

NOTE: Of Courses III, V, VII, IX, XI only two will be given in any one term.

XIII. A BEGINNERS' COURSE IN OLD ENGLISH. Special attention given to elementary grammar and the reading of easy prose. Cook's First Book in Old English, and Emerson's Brief History of the English Language.

XV. OLD ENGLISH POETRY FOR ADVANCED STUDENTS. The Beowulf and Judith will be read in class. Old English metre and the general structure of Old English poetry will be studied incidentally. 1897-98.

XVII. CHAUCER. Lectures on his life and times. Select readings. Text-books: Sweet's Second Middle English Primer; Hempl's Chaucer's Pronunciation for reference; Skeat's Student's Chaucer.

XIX. OUTLINE HISTORY OF ENGLISH LITERATURE, from the earliest times to the beginning of the eighteenth century. Lectures. 1898–99.

XXI. THE ENGLISH DRAMA TO THE TIME OF SHAKESPEARE. Thorough study of the development of the drama from the Mystery, Miracle, and Moral plays. Lectures and illustrative readings. Careful study of one or more of Marlowe's dramas. Papers. 1897–98.

XXIII. CLASSICISM AND ROMANTICISM: A thorough study of their influence on English literature from the Restoration to the death of Shelley. 3 hours a week. 1897–98.

NOTE. Of Courses XIII to XXIII only four will be given in any one term.

SECOND HALF-YEAR.

IV. AMERICAN PROSE LITERATURE. (Continuation of III).

VI. NINETEENTH CENTURY BRITISH PROSE WRITERS. (Continuation of V).

VIII. HISTORICAL DEVELOPMENT OF ENGLISH PROSE. (Continuation of VII).

X. HISTORICAL STUDY OF THE ENGLISH CRITICAL ESSAY OF THE 16TH, 17TH AND 18TH CENTURIES.

XII. ARGUMENTATION. Baker's Specimens of Classical Argumentation, and Specimens of Modern Argumentation. Argumentative papers and debates.

XIV. (Continuation of XIII). Elementary course in Old English Poetry. Andreas and Elene will be read and discussed with class. Lectures and supplementary studies in advanced grammar.

XVI. SHAKESPEARE AND HIS CONTEMPORARIES IN THE ENGLISH DRAMA. At least two of Shakespeare's best plays will be studied in class; several select plays will be assigned for parallel reading. Supplementary lectures. Papers. 1897-98.

XVIII. Continuation of XXIII.

FRENCH.

PROFESSOR COLVIN.

PROFESSOR WARREN, I, DIV. A.; III, DIV. A.

FIRST HALF-YEAR.

I. Grandgent's Grammar and French Exercises. Reading: Dumas, Les Trois Mousquetaires; Augier and Sandeau, Le Gendre de Monsieur Poirier; George Sand, La Mare au Diable; Molière, Les Précieuses Ridicules. Grandgent's Composition. The object of this course is to give a good reading and writing knowledge of French. As far as possible the recitations will be conducted in French so that, by the close of the year, students should be able to understand whatever is said in that language.

III. (*a*) THE RISE OF THE ROMANTIC SCHOOL. A resumé will be given of the condition of French literature of the classic school during the Directory and the First Empire.

The commencement of the Romantic School in the 18th century will be traced and the influence of foreign literature will be studied. The course will consist of lectures, alternating with reading, by the class, of selections from Rousseau's works and from Bernardin de St. Pierre's Paul et Virginie. French essays required on the themes and authors studied. 1897–98, *or*

(*b*) HISTORY OF FRENCH LITERATURE IN THE EIGHTEENTH CENTURY. Voltaire will be the author to whom the most of this course will be devoted. After his life and works have been studied the other dramatists of the 18th century will be taken up; Marivaux, Destouches and La Comédie Morale, Diderot and his theory of the Drama; and Beaumarchais. The beginning of the Romantic Drama will also be traced.

Lectures will be given once a week, two hours a week will be devoted to reading, etc. Essay work in French will be required on themes connected with the authors studied. M. W. F. 8:15. 1898–99.

SECOND HALF-YEAR.

II. Continuation of I.

IV. (*a*) A continuation of III. In this course will be traced the development of the romantic drama, of the modern novel, and of lyric poetry. The authors studied in detail will be Madame de Staël, Chateaubriand, Lamartine, Alfred de Vigny, and Victor Hugo. French essays required on the themes and authors studied. 1897–98. *or*

(*b*) HISTORY OF FRENCH LITERATURE IN THE EIGHTEENTH CENTURY. The authors studied in this course are Montesquieu, The Encyclopædists, Rousseau, Bernardin de St. Pierre. Lectures will be given once a week, in which the political and philosophical tendencies of the period will be taken up. Readings from the authors studied. French essay work required. 1898–99.

See pp. 115 fll., for a statement of the courses in which these studies are required.

ELECTIVE COURSES.

FIRST HALF-YEAR.

V. SEVENTEENTH CENTURY LITERATURE. Lectures and class readings from the authors studied. Subjects: The social and political condition of France at the beginning of the 17th century. The influence of the Hôtel Rambouillet. The origin of the French Drama. The development of Tragedy and Comedy. The Dramatists of the 17th Century. The founding of the French Academy. The development of Dogmatic Criticism. The history of the Fable. The literary characteristics of La Fontaine. Readings from Racine, Molière, Corneille, Boileau, La Fontaine.

VI. ADVANCED FRENCH SYNTAX. Text-book: Chassang's Nouvelle Grammaire Française. 1 hour a week.

VII. SIXTEENTH CENTURY LITERATURE. Lectures. Montaigne and Rabelais will be the authors particularly treated in this course. A thorough study will be made of Montaigne's essays and of his theories of education and of those of Rabelais. Essay work required. 1897–98.

VIII. THE FRENCH NOVEL. The history of the rise and development of the French novel up to the close of the 18th century. Lectures on the early French Romances of Chivalry; the influence of foreign fictitious literature upon the French

Novel—especially of the Greek, the Spanish, and the Italian; and the development of the different Schools of Fiction in the 17th century. The principal authors to be studied are Antoine de la Salle, D'Urfé, Gomberville, Sorel, La Calprenède, Mademoiselle de Scudéry, Cyrano de Bergerac, Madame de la Fayette, Lesage, Marivaux, L'Abbé Prévost, Rousseau and Voltaire. French essay work required.

SECOND HALF-YEAR.

IX. SEVENTEENTH CENTURY LITERATURE. Lectures on the prose writers of the period. Déscartes, his Discours de la Méthode and his Literary Influence, the history and influence of Jansenism, Pascal and Les Provinciales, Fénélon and Quietism, Fénélon's theories on the education of women, the Pulpit Eloquence of the 17th Century, Bossuet, Massillon, Fléchier, Bourdaloue. The Moralists, La Rochefoucauld, and La Bruyère. The French Novel, D'Urfé, de Scudéry, Madame de la Fayette. The Letters of Madame de Sevigné. French essay work required.

X. SIXTEENTH CENTURY LITERATURE. Lectures. Especial attention will be paid in this course to the condition of the French language at this period, and to its characteristics as distinguished from old French and modern French. Textbook: Darmesteter and Hatzfeld, Le Seizième Siècle en France.

XI. NINETEENTH CENTURY LITERATURE. Lectures on the French Drama of the 19th century. The representative modern French dramatists will be studied. Readings from Victor Hugo, Dumas, Augier, Labiche, Sardou. 1897-98.

XII. THE FRENCH NOVEL. Continuation of course X. The leading schools of French fiction in the 19th century, and the causes of their development: The Romantic school, the Realistic school, the Naturalistic school and the Psychological-Analytical novel, the attempts to found the Historical novel. The principal authors studied will be Madame de Staël, Chateaubriand, Benjamin Constant, Victor Hugo, de Musset, Gautier, Balzac, Dumas, Feuillet, About, Cherbulliez, Flaubert, de Goncourt, Daudet, Loti, Bourget, de Maupassant. French essay work required.

GEOLOGY AND MINERALOGY.

PROFESSOR CUSHING.

ELECTIVE COURSES.

I. MINERALOGY. Crystallography, and Descriptive Mineralogy. Two hours of recitation and lectures, and one laboratory exercise of three hours. Second half-year.

II. MINERALOGY. Determinative Mineralogy and Blow-pipe Analysis. Three laboratory exercises of three hours each. Laboratory fee required. Physical Crystallography may be substituted for the Blow-pipe work. First half-year.

III. GEOLOGY. Dynamical and Structural Geology. Three hours a week. Second half-year.

IV. GEOLOGY. Historical Geology. Lectures and field work in vicinity of Cleveland. First half-year.

V. PHYSIOGRAPHY. The course and manner of first development of topographic forms. Second half-year.

GERMAN.

PROFESSOR DEERING.

PROFESSOR HARRIS (Courses III and IV).

DR. MEYER (Courses I, Div. A, II, Div. A, V, and VI).

FIRST HALF-YEAR.

I. Joynes-Meissner's German Grammar; Harris's German Reader. In this and the following courses German is spoken as much as possible in the class-room, but such conversation is regarded as a means, not as an end. The class recites in two divisions, A and B.

III. Grammar continued (Thomas); Composition—Translation of simple English prose into German; Readings from modern German Prose, poetry and drama. In 1898-99 the first text will be Arnold's Fritz auf Ferien.

V. Advanced Grammar; Prose Composition; Rapid reading of representative modern authors; Practice in reading at sight. The first text for 1898-99 will be Lessing's Emilia Galotti.

SECOND HALF-YEAR.

II. Grammar continued; Reading of easy modern poems, short stories and comedies. The class recites in two divisions, A and B.

IV. Grammar and Composition continued; Readings from classic German authors—simpler prose and plays of Lessing, Goethe, and Schiller.

VI. Advanced Grammar and Prose Composition; Readings from classic German lyric, prose and drama, especial attention being given to the life and work of Schiller. Extracts from his prose, and his most important plays will be read in class and privately. Outline history of the most important periods of German literature.

See pp. 115 fll., for a statement of the courses in which these studies are required.

ELECTIVE COURSES.

In addition to courses I, III and V, which are open as electives to those who have not taken them in preceding years, there are offered:

FIRST HALF-YEAR.

VII. GOETHE. His life and works and times, with selected readings from his lyrics, prose and drama. Advanced Grammar and composition will be continued, and the development of German literature during the classic period will be carefully studied.

The following electives are open only to students who have taken courses VII or VIII, or their equivalent.

IX. FAUST. Lectures on the development of the Faust legend, with parallel readings from the most important Faust literature; Careful study of Goethe's Faust. 1898–99.

X. LESSING AND THE CLASSIC GERMAN DRAMA. Early eighteenth century drama, Lessing's reforms and influence (lectures); Illustrative parallel readings.

This year, by special arrangement, IX is being given instead of X.

XI. RECENT GERMAN PROSE. Readings from recent writers in various fields—history, biography, lectures, speeches, periodicals, newspapers.

XII. Middle High German. Paul's Mittelhochdeutsche Grammatik; Readings from representative authors. 1898-99.

SECOND HALF-YEAR.

In addition to courses II, IV, and VI, which are open as electives to those who have not had them in preceding years, there are offered:

VIII. NINETEENTH CENTURY AUTHORS. Outline History of German literature since Goethe's death, with especial reference to its prose development; Readings from some of the best modern prose fiction, essay, history, and drama. Drill in writing German.

The following electives are open only to students who have taken courses VII and VIII, or their equivalent.

XIII. GUSTAV FREYTAG. A detailed study of the life and works of Gustav Freytag and of his relations to contemporary German literature.

XIV. Heine. Life and times of Heine (lectures), with readings from his most important works. Especial attention will be given to his contemporaries as well as to the social and political aspects of the time.

XV. Middle High German. Course XII continued. 1898–99.

XVI. ADVANCED COMPOSITION. Selections from English fiction, poetry, history, drama, biography, etc., translated into German; Studies in German style; Original German essays on subjects assigned. 1898–99.

GREEK.

PROFESSOR FOWLER.

PROFESSOR FULLER.

Freshman Class.

FIRST HALF-YEAR.

I. HOMER.—The Odyssey. Two books will be read consecutively and the remainder studied in representative selections and in English translation, with a view to a literary acquaintance with the entire poem. Considerable attention will be given to developing facility in translating at sight.

SECOND HALF-YEAR.

II. ATTIC ORATORS. Selections from Lysias, Isocrates and Demosthenes; Greek Rhetoric; Lives of Attic Orators; Legislative Bodies and Law Practice in Athens; History of Greece from the beginning of the Peloponnesian war to the death of Philip; Greek Prose Composition.

ELECTIVE COURSES.

FIRST HALF-YEAR.

III. THE DRAMA. Two tragedies; Metres and Theory of Music; Lectures on the Archæology of the Drama (Actors, Costumes, Buildings, etc.).

V. PHILOSOPHY. Seminary work in the Fragments of the Early Philosophers (Diogenes Laertius, De Vitis, Dogmatibus et Apophthegmatis Philosophorum; Ritter et Preller, Fragmenta Philosophiæ Græcæ), and selections from Plato and Aristotle, *or VI.*

VI. SPECIAL ELECTIVES offered to students who wish to read extensively in definite lines of literature will embrace courses in:

(*a*) EPIC AND DIDACTIC POETRY. Homer, Hesiod, Apollonius Rhodius, and the post-Homerica.

(*b*) ORATORY. Comparative study of speeches of Attic Orators; The speeches in Thucydides, etc.

(*c*) NEW TESTAMENT GREEK.

(*d*) DRAMA. The development of Attic Drama as exhibited in the extant plays and fragments.

The aim in these courses will be to read, so far as may be, entire (either in the original or translation), all the Greek literature belonging to the group selected. Only one course, of three hours a week, will be given in any one half-year.

VII. (*a*) GREEK LYRIC POETRY. Elegiac, Iambic, Melic, Choric, and Selections from the Anthology.

(*b*) IDYLLIC AND CHORIC POETRY. Selections from Theocritus and Pindar.

(*c*) GREEK PROSE COMPOSITION. An advanced course, the special features of which will be determined by the acquirements and needs of the class.

SECOND HALF-YEAR.

IV. Plato's Apology, Crito, and selections from other works.

VIII. Aristophanes' Frogs and Selected Dialogues of Lucian, History of Greek Literature illustrated by selections from authors not hitherto studied in class.

IX. HISTORY. Seminary work in Herodotus, Thucydides, Xenophon, and other sources of Greek History.

VII. See above for statement of courses, one of which may be taken instead of VIII or IX.

HISTORY.

PROFESSOR BOURNE.

MR. MORGAN, VII, VIII.

MR. SEVERANCE, III.

FIRST HALF-YEAR.

I. HISTORY OF THE MIDDLE AGES. The principal topics will be the breaking down of the Roman civilization and the decline of the Empire, the Teutonic migrations, the growth of the Christian Church, Mohammedanism and the crusades, feudal society with special reference to its middle and lower classes,

The rise of cities, the Holy Roman Empire, the Papacy, and the beginnings of national life in Europe. In the investigation of these subjects such documents as are accessible in Henderson's Historical Documents of the Middle Ages, in the University of Pennsylvania Translations and Reprints, and in similar collections, will be carefully examined.

ELECTIVE COURSES.

IV. THE ENGLISH CONSTITUTION, a study of the present political system of England, and of its history, based on Macy's The English Constitution, with constant reference to Bagehot and other writers, including an examination of the historical documents of the constitution, *or*

THE HISTORY OF ENGLAND, from the German migrations to the present time, based on Gardiner's Students' History of England, with references to other writers, and with the use of such documents as are found in Stubbs' Select Charters, Prothero's Statutes and Documents, Gardiner's Constitutional Documents of the Puritan Revolution, etc. 1897-98.

VI. THE PURITAN REVOLUTION, with a preliminary survey of the English Reformation and the religious settlement under Elizabeth. Chief attention will be given to the struggle of James I and Charles I with Parliament, to the Commonwealth, the career of Oliver Cromwell, and the Restoration. 1898-99.

VII. AMERICAN COLONIAL HISTORY TO 1776. The aim of this course is a thorough study of the discovery and settlement of North America. The purpose and nature of colonies, the character and aims of the colonists, the methods of government in use are duly considered. Especial attention is given to the constitutional development of the English colonies, their relations to the mother country, and their growth toward independence and union. The work is based upon Thwaite's The Colonies, with constant use of the sources and more extended treatises. 1897-98.

IX. THE OLD REGIME AND THE REVOLUTION. France, with comparisons drawn from other states, 1774-1789, the French Revolution, 1789-1795, its social and political struggles and its permanent results in French society. 1898-99.

XI. MODERN EUROPE AND THE GREAT POWERS, 1851-1897. The growth of the present political system since the failure of the Revolution of 1848, the reconstruction of Germany, the union of Italy, the Eastern Question are the principal subjects. This will take the place of X in the catalogue for 1897–98.

SECOND HALF-YEAR.

II. HISTORY OF EUROPE, 1400-1750. This course will serve as the basis for the more special courses III–X. It will consider briefly (*a*) the consolidation of the national governments of France, England and Spain; the decay of the German Empire, the rise of Prussia; (*b*) the Renaissance and the Religious wars, the Reformation; (*c*) the Discoveries and the Colonial Expansion consequent upon them; (*d*) the English Revolution; (*e*) the age of Louis XIV. A careful survey of the historical literature bearing upon each of these phases of European history will be an important part of the work.

III. THE REFORMATION. This course will be based upon Fisher's History of the Reformation, supplemented by informal lectures. The growth of the Roman Heirarchy will be sketched. Then the early attempts to reform the Church will be passed in review. The abuses which led to the Reformation will next be considered. Special attention will be devoted to the life and work of those central figures of the period—Erasmus, Luther, Calvin, and Loyola. Collateral readings will be assigned in such books as Schaff's History of the Christian Church, Häuser's Period of the Reformation, Wace and Bucheim's Primary Works of Luther, Seebohm's Oxford Reformers, etc. Special reports upon appropriate themes will be expected from students taking the course.

V. HISTORY OF FRANCE, from the fall of the Carolingians to the reign of Louis XVI. The aim of this course is, utilizing the

knowledge gained from course I, to investigate more carefully the rise of the monarchical power in France, the Feudal system, the territorial growth of the kingdom, and the development of the administrative system. The general features of French History will also receive more detailed treatment. Adams' Growth of the French Nation will be used as the text-book. 1897-98.

VIII. POLITICAL HISTORY OF THE UNITED STATES from 1783 to opening of the Civil War. Hart's Formation of the Union and Wilson's Division and Reunion, with parallel readings in more extended works, such as those of von Holst, Henry Adams, McMaster, Schouler, Rhodes, the volumes of the American Statesmen Series; Prof. Johnston's articles in Lalor's Cyclopædia of Political Science, etc. Recitations, informal lectures, special reports upon topics assigned to each student individually. The aim will be to gain a thorough familiarity with our political history, the rise of parties and the growth of institutions. 1897–98.

X. THE REORGANIZATION OF EUROPE, in consequence of the Revolution, 1795-1851. The spread of revolutionary ideas, the rise of French influence through Napoleon's victories, the Empire, the Restoration, and the successive revolutionary movements in France, Italy, Spain, and Germany. 1898–99.

XII. HISTORY OF DISCOVERY AND COLONIZATION, with special reference to enterprises undertaken during the last two hundred years. The aim of this course is to investigate the origin of the colonial empires of England, France and Germany, to consider the methods by which they are controlled, the place they occupy in contemporary international politics; and incidentally, to study the history of India, Africa, Australia, Canada and South America, as well as to trace the progress of geographical knowledge. 1897–98.

XIII. METHODS OF HISTORICAL RESEARCH. This course includes a consideration of the scope of history, and the nature of the material upon which historical studies are based, as well as practical work in historical criticism. 1898–99.

HYGIENE.

DR. BOGGS.

Freshman Class.

FIRST HALF-YEAR.

I. The instruction consists of weekly lectures illustrated with charts, manikin and skeleton. These lectures embrace the fundamental principles that underlie the promotion of health; Anatomy and Physiology, or a study of the structure and functions of all the organs of the body; the proper exercise and rest of the muscles; the conversion of food into tissues; the importance of always keeping the body supplied with pure blood; ventilation with relation to health; food and clothing in their relation to health. Special attention is given to the nervous system, including the care of the eyes.

ITALIAN.

PROFESSOR COLVIN.

ELECTIVE COURSES.

FIRST HALF-YEAR.

I. Grandgent's Grammar and Composition. Readings: de Amicis, Vita Militare; Manzoni, I Promessi Sposi; Dante, Inferno.

This course is intended to give the students a good reading knowledge of Italian. A correct pronunciation is insisted upon, and much rapid reading.

III. To be given only to those students who have taken I and II.

ITALIAN LITERATURE IN THE 14TH CENTURY.

The aim of this course is to study the masterpieces of Italian literature in the fourteenth century. The condition of the Italian language and literature previous to the fourteenth century will first be briefly considered. The study of Dante will be continued from course II in selections from the Inferno and Vita Nuova.

Selections will be read from Boccaccio's Decamerone and from Petrarca.

Essays will be required from the students on themes connected with the literature studied.

SECOND HALF-YEAR.

II. A continuation of I.

IV. ITALIAN LITERATURE IN THE 15TH AND 16TH CENTURIES.

Selections will be read from Ariosto's Orlando Furioso, from Tasso's Gerusalemme Liberata and his Aminta, from the works of Bojardo and Pulci.

Students will have private reading assigned them, and essay work will be required.

LATIN.

PROFESSOR PERKINS.

PROFESSOR PLATNER. (Absent 1897-8.)

Freshman Class.

FIRST HALF-YEAR.

I. Livy, Books XXI, XXII; Translation at Sight and at Hearing; the Writing of Latin. Collateral reading in Roman History.

SECOND HALF-YEAR.

II. Cicero de Senectute; Plautus (one play); Horace, Satires; Translation at Sight and at Hearing; the Writing of Latin.

ELECTIVE COURSES.

There are offered any three of courses III-IX and X-XVIII each half year.

FIRST HALF-YEAR.

III. HORACE, EPODES, ODES.

By the second year it is expected that the student can give attention to the purely literary features of the author's work.

Special attention is paid to Latin Prosody. Students are trained by daily practice to render the Latin intelligently and at the same time observe the metrical scheme.

IV. CICERO'S LETTERS. The letters chosen will be illustrative of the private life of their author and the political, literary and historical conditions of the times. Each member of the class will do special work on some points connected with this correspondence.

V. LETTERS OF PLINY THE YOUNGER. These letters are read as an introduction to the social and political life of the early Empire. The style and diction of Silver Latin are contrasted with those of Classical Usage. Students taking this and the following course are expected to include in their reading Bury's History of the Roman Empire and Capes' History of the Early Empire and Age of the Antonines.

VI. TACITUS AND SUETONIUS. Tacitus, Agricola; Annales (Books I-II, entire; Books III and IV, selections); Reading at Sight in Germania; Suetonius, selections.

The peculiar features of Tacitus' style will be carefully considered. A paper will be prepared by each member of the class on some subject connected with this course of reading.

VII. LATIN COMPOSITION (two days a week). Rapid reading in some author selected by class (one day a week). Students are occasionally placed in charge of class and given pedagogical training in Latin. The course in outline and method is especially adapted to prospective teachers.

VIII. CATULLUS, TIBULLUS, PROPERTIUS. This course includes the history of the development of Lyric and Elegiac Poetry among the Romans and the consideration of the influence of the Alexandrine school. Much time will be given to an intelligent rendering of the Lyric, Heroic and Elegiac measures employed by Catullus. Comparison will be instituted between Catullus and Horace, and Catullus' points of originality considered. Various papers will be prepared by members of the class upon subjects connected with each of the authors included in this course.

IX. HISTORY OF LATIN LITERATURE (Poetry). Lectures, with reading of typical selections, and direction of the student's private reading, one hour a week. Advanced courses in Latin writing, two hours a week.

SECOND HALF-YEAR.

X. HORACE, Epistles, Books I, II; Translation at Sight and at Hearing from Roman Life in Latin Prose and Verse (Peck and Arrowsmith), and from Latin Selections (E. H. Smith), including specimens beginning with the early period and going down to the end of the classical period.

XI. JUVENAL. This course includes a summary of the history of Roman satire and a critical comparison of Juvenal and Horace. Various papers are prepared by members of the class on topics suggested by the text. Much time will be given to the rendering of the Latin and to the metrical form.

XII. TERENCE (four plays), two hours a week; lectures on Roman Literature, one hour a week. Collateral reading upon periods covered by lectures. Metres; Roman Theater; Drama.

XIII. LATIN RHETORIC. Quintilian, Book 10; Cicero, De Oratore, Selections.

XIV. ROMAN ORATORY. The Brutus of Cicero; Tacitus, Dialogus de Oratoribus.

XV. TEACHER'S COURSE. This course is recommended for students only who have had two years of elective work in Latin. One of the features of the course will be a rapid summarizing of distinctive usages and attributes of various authors and periods, noting points of similarity and of difference, in matters of form, thought and expression. The aim of this course is to give prospective teachers assurance in the presentation of their own work. Suggestions will be given as to the quickest way of attaining best results in preparatory teaching and the relative importance of various methods of instruction. Students will be placed in charge of class, from time to time, and will explain the way in which they would present matters

of pronunciation, syntax, prosody, general directions for reading at sight and at hearing, with practical illustrations. Criticisms and suggestions on methods employed will be made by the instructor.

XVI. ETHICS, as set forth by Cicero, Cicero de Officiis; Ethics of Epicurus as explained by Lucretius; Lucretius de Rerum Natura, Selections.

In connection with this course the class will read extensively on ancient systems of philosophy and their influence as portrayed in Roman writers.

XVII. Continuation of VII.

XVIII. HISTORY OF LATIN LITERATURE (Prose). Lectures, with directions of the student's private reading, one hour a week. Advanced courses in Latin writing, two hours a week.

MATHEMATICS.

PROFESSOR PALMIÉ.

Freshman Class.

FIRST HALF-YEAR.

I. Trigonometry. Plane and Spherical; Trigonometrical Formulæ; Solution of Triangles; Applications to Surveying and Navigation; Jones' Drill Book in Trigonometry.

SECOND HALF-YEAR.

II. Algebra, Binomial Theorem; Elements of the Theory of Equations, Logarithms; illustrative examples, given out to be solved in or out of the class room; Jones's Drill Book.

Sophomore Class.

SECOND HALF-YEAR.

IV. MECHANICS. Elementary principles in reference to solid bodies.

ELECTIVES.

FIRST HALF-YEAR.

V. Analytical Geometry, including Construction and Discussion of Equations, Straight Line, Circle, Parabola, Ellipse, Hyperbola, Nichol's Analytical Geometry.

VII. INTEGRAL CALCULUS, including methods of Integration; Geometrical Applications; Mechanical Applications. Osborn's Integral Calculus.

VIII. ANALYTICAL GEOMETRY (advanced course). Plane Geometry, including Review of the Parabola and Ellipse, Hyperbola, General Equation of second degree; Abridged Notation; Reciprocal Polars; Harmonic and Anharmonic Properties; Method of Projection; Invariants and Covariants. Salmon's Conic Sections.

IX. THE THEORY OF EQUATIONS, including General Properties of Equations, Relations between Roots and Co-efficients; Transformations, Algebraic Solution of the Cubic and Biquadratic, Solution of Numerical Equations. Burnside and Panton's Theory of Equations.

SECOND HALF-YEAR.

III. Exercises in Plane and Solid Geometry, to be solved by the students; Chauvenet's Elementary Geometry. 1897-98.

VI. DIFFERENTIAL CALCULUS, including Differentiation of Algebraic and Transcendental Functions; Successive Differentiation; Evaluation of Indeterminate Forms; Maxima and Minima of Functions; Development of Functions in Series. Curve Tracing and Application of the Calculus to Plane Curves. Osborn's Differential Calculus.

XI. QUATERNIONS, including Victor Addition, Subtraction, Multiplication and Division; Straight line and Plane; Circle and Sphere; Ellipse, Parabola, and Hyperbola; General Surfaces of the Second Order; Formulæ and their Applications; Vector Equations of the First Degree. Kelland and Tait's Introduction to Quaternions.

XII. PROJECTIVE GEOMETRY, Lectures on Parallel Projections; Perspective Homology; Vanishing Points and Lines; Projective Figures; Cross Ratios; Harmonic Ratios; Projective Ranges and Pencils; Involution; General Properties of Conics; Conic Ranges and Pencils; Conic Involution; Conjugate Points and Lines; Reciprocal Figures; Centers and Diameters; Foci and Directrices.

PEDAGOGY.

ASSSOCIATE PROFESSOR MACDOUGALL.

FIRST HALF-YEAR.

I. HISTORY OF EDUCATION. The course will begin with a sketch of ancient ideals of education, Greek and Roman, and the relation of their educational systems to the social-political life. It will then consider the change in educational system and method due to the transformation of social and religious ideals in the middle ages. From the time of the Reformation the topic will be taken up in more detail. The rise of universities, the growth of common schools, educational reform, the establishment of national school systems, and like movements will be studied with a view to obtaining a coherent knowledge of the rise and development of existing principles and methods of education.

II. PEDAGOGICAL THEORY. A discussion of the nature and aims of education, and of general pedagogical methods: Child nature, the general question of incentives and deterrents, interest, imitation, ripening of instincts, rewards and punishments, character in education, special education, relative value of studies, education of the voluntary attention, feeling and emotion in education. Lectures, theses, and private reading.

SECOND HALF-YEAR.

III. EDUCATIONAL CLASSICS. This course is based upon a critical reading of as many of the educational classics as time will

allow. These will be Comenius, Froebel, Pestalozzi, Herbart, Spencer, with references to Ascham, Locke, Rousseau and others. The aim of the course is to obtain a clear idea of the fundamental principles of these successive reformers and to follow the progress of educational ideals. Lectures, discussions, reference reading and reports on special topics.

IV. PSYCHOLOGY IN EDUCATION. This course requires no text-book, but students will be expected to co-operate with the instructor in consulting and making reports upon literature on the following topics. (*a*) The Mutual Relations of Mind and Body: The Reflex Arc, Sensory and Motor Education, Defects of Sight and Hearing, Manual Training. (*b*) The Mind of the Child and its Development. (*c*) Growth of the Nervous System: Nascent Periods, Physical Measurements, Sex in Development, Neuroses of Childhood and Development, Adolescence, Sequence in Education; Fatigue, Overpressure, Neurasthenia, Stimulants. (*d*) Plasticity of the Nervous System: Habit, Association, Memory and its improvement. (*e*) Apperception and Interest, Imitation, Attention, Suggestion (Hypnotism), Will and its training. (*f*) Emotional Health, Morbid Types, Conscience. (*g*) Belief: The Psychological Aspect of Scepticism.

V. NATIONAL SCHOOL SYSTEMS. School systems of Europe; the German system; France; the schools of England; the recent movement in Norway. The growth of the modern idea of system; school organization; relation of the school to the state. Study of typical schools in organization and method. Our own school system. Recent movements of reform. Lectures, reports in literature and statistics, private reading, discussions. *Or*,

PEDAGOGICAL SEMINARY. For advanced students only. Reading on special topics, under guidance of the instructor, and original investigation. Reports of literature on recent changes and reforms. Discussion of contemporary topics.

PHILOSOPHY.

PROFESSOR AIKINS.

All students are required to take at least one course besides Logic in either this department or the department of Economics.

FIRST HALF-YEAR.

II. ELEMENTARY PSYCHOLOGY. This course is intended to cover about the following ground: Part I. The Methods and Aims of Psychology; Cerebral localization and its more obvious psychological implications; The Nervous Mechanism and the empirical laws of its action and connection with consciousness; The mental phenomena which can be largely explained by such laws. Part II. The Elements of Knowledge; Impressions of Sense; The Apparently Non-sensuous Concepts; Judgments. Two hours a week are devoted to recitation or lectures on the basis of James' Psychology (briefer course), and two or three hours to laboratory exercises. It is hoped that these exercises, based upon Sanford's Laboratory Course in Psychology, will convey a good deal of useful, though miscellaneous, information about the various senses, illustrate some of the more general psycho-physiological laws, and by concrete examples help to make clear the significance and importance of the higher apperceptive processes.

IV. HISTORY OF ANCIENT PHILOSOPHY. The course includes: (1) Lectures, with parallel readings, tracing in brief outline the development of Greek speculative thought from the mythology of Homer and Hesiod to Neo-Platonism and Christianity; (2) The reading in English and discussion of some of Plato's Dialogues.

VI. THEORY OF KNOWLEDGE. The reading and discussion of Locke's Essay concerning Human Understanding, Berkeley's Principles of Human Knowledge, selections from Hume's Treatise of Human Understanding, and, if time permit, Newman's Grammar of Assent or Balfour's Defense of Philosophic Doubt.

SECOND HALF-YEAR.

I. LOGIC. The course covers the topics dealt with in Jevons' Elementary Lessons, and in Minto's Logic Deductive and Inductive.

III. ETHICS. The course is based upon Seth's Study of Ethical Principles.

V. HISTORY OF MODERN PHILOSOPHY. The course is based on Royce's Spirit of Modern Philosophy.

VII. SEMINARY for the more thorough study of some author or topic in Logic, Psychology, or History of Philosophy. This course is intended only for students who have already taken several courses in philosophy.

PHYSICS.

PROFESSOR WHITMAN.

Sophomore Class.

SECOND HALF-YEAR.

A. A limited number of laboratory exercises in connection with mathematics IV.

ELECTIVE COURSES.

FIRST HALF-YEAR.

Course I belongs to a group of three courses, Biology I, Chemistry I, and Physics I, two of which must be chosen by all students.

I. MECHANICS, SOUND, LIGHT. Carhart's University Physics with lectures and laboratory work.

III. PHYSICAL OPTICS. Glazebrook's Physical Optics, with lectures and laboratory work.

V. THEORY AND PRACTICE OF ELECTRICAL MEASUREMENTS. While mainly a laboratory course, this includes a general

review of electrical theory. The text-book will depend somewhat on the nature of the class. Two laboratory exercises and one conference weekly.

I*a*. No special course is offered for those entering the Latin-English course, but arrangements are made by which the attainments of those who have had a preparatory course in physics may be fully utilized.

SECOND HALF-YEAR.

II. HEAT, ELECTRICITY AND MAGNETISM. Continuation of Course I.

IV. THEORY OF HEAT. A course based mainly on Maxwell's Theory of Heat, with lectures and references.

VI. Continuation of Course V. Second half-year.

An elementary knowledge of the Differential and Integral Calculus is necessary for Courses IV, V and VI.

POLITICAL ECONOMY.

See Economics.

PSYCHOLOGY.

See Philosophy II, VII, and Pedagogy III, IV.

SPANISH.

PROFESSOR COLVIN.

FIRST HALF-YEAR.

I. Knapp's Grammar and Reader; The Berlitz Method in Spanish; Galdos, La Loca de la Casa; Valdes, Marta y Maria; De Alarcon, El Sombrero de Trés Picos.

III. (To be given only to those who have had Spanish I). THE LITERATURE OF THE GOLDEN AGE. Review of the political situation of Spain in the 16th and 17th centuries, and of the influences that caused the development of Spanish literature in this period, especially of the drama and the novel (lectures). Text-book, Butler Clarke, History of Spanish Literature. Reading: Copious extracts from the first and second parts of Cervantes, Don Quixote; Calderon, La Vida es Sueño; Lazarillo de Tormes; Lope de Vega, La Niña de Plata. Essays will be required on themes connected with Spanish literature and the authors studied.

SECOND HALF-YEAR.

II. Continuation of course I.

IV. EARLY SPANISH AUTHORS. A brief resumé of Spanish Phonetics and Morphology will be given in this course, followed by readings from the Poema del Cid and from El Libro de Alexandro. The origin of Spanish poetry will also be studied.

During each college year there are lectures delivered at Clark Hall, which the students are invited to attend. Among recent lecturers in addition to members of the Faculty, are Bishop J. H. Vincent and Bishop W. A. Leonard.

MUSIC.

The College offers opportunities for gratuitous instruction in chorus singing at Clark Hall.

TERMS AND VACATIONS.

The first half-year begins on the Thursday after the eighteenth day of September, and continues, with a holiday recess of nine days, until the Saturday after the first Thursday in February. The second term begins on the Monday after the first Thursday in February, and continues, with a recess from April 7th to April 13st inclusive, till Commencement, which occurs on the Tuesday after the seventeenth day of

June (or after the sixteenth in years in which February has twenty-nine days). On Thanksgiving day, on the twenty-second of February, and on Memorial Day, no college exercises are held; on the Day of Prayer for Colleges, religious exercises are held in the chapel.

EXAMINATIONS.

Written and oral examinations in each subject are held at the end of each term and from time to time during the term.

There are also such other examinations during the course of the term in the several studies as the Faculty may appoint.

Students who fail in the closing examinations of either term must present themselves for re-examination before the opening of the term which begins about six months after the examination in which the failure occurred.

RELIGIOUS WORSHIP.

The principles and influences of the College are distinctively Christian, but the College has no formal connection with any particular denomination.

A short religious service is held each morning in Clark Hall. All students are expected to be present at these services and on Sundays to attend the services of the churches of their choice. It is desired that as far as possible each student should enter into the life of her church.

The students carry on a Young Women's Christian Association, the aims of which are to maintain in the College a healthy, progressive Christian spirit and to keep the students in touch with the religious and charitable work of the world.

LIBRARIES.

Hatch Library on the Adelbert College campus, five minutes' walk from Clark Hall and Guilford House, is open on equal

terms to all members of the University. It is furnished with well lighted reading rooms, contains about 35,000 bound volumes and 10,000 pamphlets, and is especially rich in German, French and historical literature.

For the special convenience of students in the College for Women there is in Clark Hall itself a carefully selected and growing library containing encyclopædias and other books of reference, magazines, duplicates of books in common use, and a considerable number of other works. This library is particularly well supplied with Biblical literature, and funds from the Florence Harkness foundation are constantly expended to enrich this supply and keep it modern.

The Cleveland Public Library contains about 110,000 volumes, including valuable collections for the study of Shakespeare, modern German literature, history, art and archæology. This library is open to all residents of the city, but by special arrangement with the trustees, members of the college can draw and return its books at the Hatch Library.

The Case Library contains about 40,000 volumes, is well supplied with periodicals, general literature and music, and offers excellent facilities for the study of the fine arts, political economy and sociology, and chemistry and botany. By the courtesy of its directors members of the college are given the use of this library without paying the usual fee.

LABORATORIES AND MUSEUMS.

BIOLOGY.

A new laboratory building, especially designed for the study of the biological sciences, particularly for work in zoology, embryology, anatomy and botany, was begun in October,

1897, and will probably be completed by June, 1898. The building will consist of three stories. On the first floor, which is devoted chiefly to anatomy and botany, there are two small wings, one of which will contain the heavy gearing and machinery used in heating and lighting. The other wing contains a small conservatory and vivarium. The second story consists of a large elementary laboratory, special laboratories for embryology and zoology, library, preparation rooms and offices for instructors. On the third story there is a large and commodious lecture room, and museum rooms for a teaching collection of animals and plants. The popular collections of natural history will be placed in the wide halls of the building. The third story will also contain a complete photographic laboratory.

CHEMISTRY.

The department of chemistry is well supplied with apparatus for use in illustrative lectures, and the laboratory is so equipped with apparatus that each student can become familiar with the facts of the science by experiments made by herself under the guidance of the instructor. Experimental courses are offered in the chemistry of the non-metallic elements, in the chemistry of the metals, in organic chemistry and in analytical chemistry.

GEOLOGY AND MINERALOGY.

The collections at the service of the department are well chosen, and are rapidly growing. They comprise sets of crystal models and crystals, crystal sections for optical study, and rock sections in great number, in addition to the mineralogical, lithological and palæontological collections. The

library is good and constantly being increased. The vicinity of Cleveland is interesting geologically, especially in regard to its glacial deposits and its palæontology. It furnishes abundance of material for special investigation.

PHYSICS.

The physical laboratory is a three story building of sound and substantial construction, containing large lecture and laboratory rooms for the elementary courses, and a considerable number of smaller apartments for more advanced work. Especial attention has been paid to heating, lighting and ventilation.

The department is equipped with a large variety of apparatus bearing on the courses at present offered—all of which include work in the laboratory—and additional apparatus is continually being obtained.

PSYCHOLOGY.

There is in Clark Hall a laboratory containing some of the apparatus most essential for demonstration and simple experiments.

GYMNASIUM.

The gymnasium in Clark Hall is fitted up with apparatus for general use, and is under the direction of a graduate of Anderson Normal School of Gymnastics. Upon entering College each student is examined by the College Physician, and measurements are taken by the Instructor in Gymnastics; exercises are assigned in accordance with these measurements. Exercise under the personal supervision of the Instructor is required three times weekly, but no exercise is undertaken before the student has been trained to the point of its easy

accomplishment. When the weather permits, work in the gymnasium is replaced by field sports.

There are two President's prizes—one of fifteen, another of ten dollars—which are awarded to the students who, through their gymnastic work, make the greatest progress toward symmetrical development.

BUILDINGS AND SOCIAL LIFE.

Clark Hall, the gift of Mrs. Eliza Clark, contains recitation rooms, library, chapel and gymnasium, besides reception room and office. Guilford House, the gift of Mrs. Samuel Mather, offers an excellent home for students. Ordinary suites of rooms have a study and two bedrooms, and are designed for the use of two persons. The arrangements are such that each person is able to have, if she prefer, one room to herself. These rooms are large, light, well finished and well furnished. So fully is provision made for the comfort of each student that she need not necessarily bring with her anything except her wearing apparel and books. A study lamp is furnished. All the bed-linen and table-linen being provided, each student has merely to pay fifty cents a month to meet the cost of its laundering. All other laundry work is done at the moderate charge of fifty cents a dozen. The table is excellent and well served. Every material, social, intellectual and Christian interest is the object of constant care. Certain members of the Faculty reside in the house. Their endeavor and the endeavor of all the officers—Trustees, Faculty and Advisory Council—is to make such a home for college women as they ought to have.

STUDENT ORGANIZATIONS.

The students publish a monthly journal called *The College Folio*. This periodical gives an opportunity not merely to

record or comment upon the events of their college life, but also to give expression to their literary interests.

Amongst the students' clubs are a Young Women's Christian Association, a Glee club, a Dramatic Association, a French club, a Greek club, the Present Day Club, and the Avon Club for the study of English Literature.

EXPENSES.

The charge for tuition and incidentals for each student is $75 per year.

Each student pays a matriculation fee of $5 on entering College, and also deposits with the treasurer $5 as a guarantee against damages to college property. This guarantee fund may be returned. No charge is made for diplomas.

The price of board and room in Guilford House for the college year is from $250 to $400 according to the character and location of rooms, though there are a few rooms at $200. Suites of three rooms for two students at the price of $250 for each student are for various reasons the most satisfactory.

One-half of the charge for tuition, board and room is to be paid at the beginning of the college year, and one-half at the beginning of the second half-year; no part will be refunded if the student retain her place in class.

Students in the Biological Laboratory pay the following fees: Course I, three dollars; II, five dollars; III, four dollars; IV, five dollars; V, five dollars; VI, four dollars. In the Physical Laboratory the fee for course I is three dollars; for other courses five dollars. The Laboratory fees for the courses in Chemistry are: For I and IV, three dollars; II, four dollars; III and V, five dollars; VI, six dollars. These fees are designed to defray, in some measure, the cost of perishable materials, and to meet the loss which arises from the use of

instruments. Before entering upon one of these laboratory courses *students must present a card from the Bursar*, showing that these fees have been paid. In the Psychological Laboratory there is an assessment of not more than one dollar.

BENEFICIARY AID.

There are certain annual scholarships which are awarded to students of high rank and slender means, by which they are relieved of a portion of the tuition fee of the College. Conference either in person or by letter with the President is invited.

Students receiving these benefits are expected to finish their course here. If dismissal to another college is sought, the College dues, including the amounts given or loaned, must first be paid.

The opportunities offered by the College for the higher education of young women of limited means are presented to the attention of those who desire to promote such work by the establishment of scholarships for worthy students. Such foundations may be made to have an annual value of from $25 to $325.

DEGREES.

The degree of BACHELOR OF ARTS is conferred on those who have completed the classical course, or that which includes the study of the Greek language and literature; the degree of BACHELOR OF LETTERS on those who have completed the Modern Language course, or that in which modern languages are substituted for Greek; and the degree of BACHELOR OF PHILOSOPHY on those who have completed the Latin-English course or that which differs from the BACHELOR OF LETTERS' course in that an entrance requirement of science is substituted for French or German.

PUBLICATION FUND.

The Francis G. Butler Publication Fund has been established, the income of which is to be devoted to the publication of original researches in the field of American history by professors or students of this College as well as of Adelbert College and the Graduate School.

THE GRADUATE SCHOOL.

In the Graduate Department of the University opportunity is given graduates of this and other colleges to pursue courses of study leading to the degrees of A. M. and Ph. D.

For the catalogue of Graduate Courses, address Professor R. W. Deering, Secretary of the Graduate Faculty.

GRADUATES.

1891.

MARY LOUISA FRENCH, A. B., 716 W. Beacon St., Los Angeles, Cal.
Teacher of English and Latin, Miss Mittleberger's School, Cleveland, 1891-92; Teacher of Latin and Greek, English Classical School for Girls, Passadena, Cal., 1893-4; Teacher in Classical School for Boys, Pasadena, Cal., 1894-95; Teacher English Subjects, St. Agatha's School for Girls, Los Angeles, 1897.

1892.

HELEN HUTCHINSON COWING, B. L., 9 Hower Block, Cleveland.
Teacher in High School, Auburn, N. Y., 1894-95; Teacher in Union School, Cleveland, 1895-97; Teacher in Fairmount School, Cleveland, 1897.

MARY ALMINA JOHNSON, B. L., Erie, Pa.

1893.

MARY ELIZABETH BABBITT, B. L., PD. B., 56 Mayfield St., Cleveland.
Albany Normal School, 1893-94; Teacher of Modern Languages and History, State Normal School, New Paltz, N. Y., 1894-97.

ELEANOR LEWIN CRITCHLEY, PH. B., Willoughby.
Teacher of Latin, High School, Willoughby, 1893—

ADELAIDE COOKE DENISON, B. L., 44 Brenton St., Cleveland.
Normal School, 1895-96; Teacher in Tremont School, Cleveland, 1896-97; Teacher of Mathematics, West High School, Cleveland, 1897—

EMILY CHRISTIANA MONCK, A. B., A. M., 190 Arlington St., Cleveland.
Graduate School, Western Reserve University, 1893-94; Cleveland Normal School, 1894-95; Teacher of English, Central High School, Cleveland, 1895-96; Teacher of English and Greek, Central High School, Cleveland, 1896-97; Teacher of Greek and Latin, Central High School, Cleveland, 1897—.

IDA BLANCHE SANDERS, B. L., Cleveland.
Cleveland Normal School, 1893-94; Assistant Principal Huck School, 1894-95; Teacher in South High School, 1895—

1894.

BERTHA LEE COE, B. L., East Cleveland.
Teacher of Mathematics in Springfield Seminary, 1895-97.

EDITH FAHNESTOCK, B. L., Pembroke West, Bryn Mawr, Pa.
University of Zürich and the Sorboune, 1894-96; Teacher in Miss Buckingham's School, Canton, 1896-97; Fellow in Romance Languages, Bryn Mawr College, 1897-98.

MARY CHESNEY HOVER, A. B., B. L., 410 S. State St., Painesville.
Mrs. Harry R. Collacott.

MAUDE LAURA KIMBALL, A. B., 371 E. Prospect St., Cleveland.
Teacher in Shaw Academy, East Cleveland, 1894–95.

NELLIE MARIAH LLOYD, A. B., Elyria.
Teacher of Greek, Latin and German, High School, 1894—

VICTORIA CHARLOTTE LYNCH, A. M., 302 Sibley St., Cleveland.
Graduate School, Western Reserve University, 1894–95; Normal School, 1895–96; Teacher in Central High School, Cleveland, 1896–97.

HELEN MARY SMITH, B. L., Cleveland.
Normal School, 1894–95; Teacher of English in Central High School, 1895—

MARY WILCOX, A. B., 402 S. State St., Marion.
Mrs. Charles McClain.

1895.

ANGEL AMBLER, PH. B., 76 Lincoln Av., Cleveland.
Teacher in East Cleveland School, 1895–96; Teachers' College, New York, 1896–97.

FRANCES BLANCHE ARTER, B. L., 1922 Euclid Av., Cleveland.

SUSIE JEWETT ASPLIN, PH. B., 188 Washington St., Lynn, Mass.
Mrs. William S. Culver.

MARY JOSEPHINE BOND, B. L., 1231 Curtis Av., Cleveland.
Art School..

CORNELIA CALDWELL SIGOURNEY EPPS, A. B., Glenville.
Cleveland Normal School, 1895–96; Grammar Teacher Glenville Public Schools, 1896–97; Teacher of Latin and English Literature, Glenville High School; Director of Drawing and Physical Cul: ıre, Glenville Public Schools, 1897—

HARLOTTE AMELIA KENDRICK, B. L., Wymore Av., E. Cleveland.

LICE BELLE MORRIS, PH. B., 798 Republic St., Cleveland.
Teacher in Ossining School for Girls, 1895—

MARY LOUISE REARDON, A. B., 133 Arlington St., Cleveland.
Cleveland Normal School, 1895–96; Teacher, Stanard School, 1896–97; Assistant Principal, Sowinski School, 1897—

1896.

SARAH ALVIRA ADAMS, A. B., cor. Euclid and Wymore Avs., E. Clevel'd.
Assistant in English, College for Women, 1897–98.

MARY ALICE ARTER, B. L., 1922 Euclid Av., Cleveland.

ALTA MARILLA BARKER, PH. B., Hamline University, St. Paul, Minn.
Teacher of Biology, High School, Princeton, Ill., 1896–97; Preceptress and Teacher in Hamline University, 1897—

MARY MARGARET BARNES, PH. B., Box 1, St. Louis, Mich.
Teacher of Latin and Mathematics, High School, St. Louis, Mich., 1897–98.

FLORENCE GERTRUDE BELL, A. B., Oneida, N. Y.
97 Fourth av., Cleveland.
Cleveland Normal School, 1896–97; Teacher of Mathematics and German, High School, Oneida, N. Y., 1897—

EMMA GEORGER BRASSINGTON, B. L., 798 Willson Av., Cleveland.

MARY FAIRFIELD COIT, B. L., Glenville.

MAY COLE, A. B , 903 Case Av., Cleveland.

MARY AMANDA CROWE, A. B., 405 Park Av., Warren.
Frau Doktor Hempel's Seminar, Berlin, 1896–97.

KATHARINE CROXTON, B. L., Zanesville.
Assistant in Philosophy, College for Women, 1896–97; Teacher in Putnam Seminary, Zanesville, O., 1897—

CLARA MAY DE GROODT, B. L., Granville.
Teacher of Mathematics and Science, Granville Female College, 1896—

HATTIE BELLE DENISON, B. L., Garrettsville.
Teacher, Garrettsville High School, 1897—

†FRANCES MAUDE GLIDDEN, PH. B.,

ETHEL LYNN GRISTE, B. L., 22 Anndale St., Cleveland.
Graduate School, W. R. U.

BERTHA MAY HULETT, PH. B., 710 E. Prospect St., Cleveland.
Normal School.

EDITH STRATTON LAISY, B. L., Erie, Pa.
Mrs. R. S. Brown.

BERTELLE MAUD LYTTLE, B. L., Barberton.
Teacher, High School.

MARY IRENE MCHANNAN, PH. B., 168½ Dodge St., Cleveland.
Cleveland Normal School, 1896–97; Assistant-principal of Eagle School, Cleveland, O., 1897—

ALICE MAUD MCKINLEY, A. B., Chicago, Ill.
Teacher, Calumet School.

†Obit March 27, 1897.

MARY FRANC MATTISON, A. B., 725 Genesee Av., Cleveland.

RUBY ELBERTA MILLER, A. B., 333 Amesbury Av., Cleveland.
Cleveland Normal School, 1896-97; Teacher, Stanard School, Cleveland.

CLARA BELLE MYERS, PH. B., P. O. Address, Station 2, Cleveland.
Teacher, East Cleveland High School.

BESSIE DE KALB PEASE, PH. B.. Meriden, Conn.
Teacher of French and Science, High School.

META WILHELMINA PETERS, A. B., 806 Willson Av., Cleveland.
Cleveland Normal School, 1896-97; Teacher, Cleveland Schools.

DAISY HELEN ROBBINS, PH. B., 558 Norwood Av., Cleveland.
Cleveland Normal School, 1896; Assistant in High School, North Bloomfield, O., 1896-97; Cleveland Public Schools, 1897—

ETHEL KING SMITH, A. B., Geneva, N. Y.
Teacher, De Lancey School.

RUTH PEET SMITH, A. B., 36 Dorchester Av., Cleveland.
Graduate School, W. R. U.

ALICE MAY STEBBINS, B. L., 836 Logan Av., Cleveland.
Teacher High School; Teacher of Mathematics and English, Jefferson Educational Institute, Jefferson, O., 1896—

BLANCHE EVALYN STRAIGHT, B. L., North Kingsville.
Teacher, Public Schools.

MABELLE ESTELLE VAN CLEVE, B. L., 38 Hawthorn Av., Cleveland.

ELLEN ARVILLA VAN FLEET, PH. B., 105 Murray Hill, Cleveland.
Cleveland Normal School, 1896-97; Teacher at Hough School, Cleveland, O., 1897—

LULA JEAN VAN FLEET, PH. B., 810 W. Tuscarawas St., Canton.
Cleveland Normal School, 1896-97; Miss Buckingham's School, Canton, O., 1897—

1897.

MAY CAMPBELL ARTER, A. B., 1632 Cedar Av., Cleveland.
Cleveland Public Schools.

CLARE LOUISE BURT, B. L., 70 Cornell St., Cleveland.

ANNA RACHEL CAMP, PH. B., Chicago, Ill.
Chicago University.

MARY BARNARD CASE, PH. B., 2683 Euclid Av., Cleveland.
Normal School.

ELIZABETH COIT, PH. B., Bullitt Park, Columbus.

ELSIE CLEMENT DAVIES, B. L., 161 Spring St., Meadville, Pa.

RAY RISTON GILBERT, B. L., 85 East View Av., Cleveland.

ELISABETH RAYMOND HAYNES, PH. B., 713 Erie St., Toledo.

FLORA GRACE KAUFHOLZ, PH. B., 43 E. Market St., Warren.
Teacher in High School.

EDITH GROVES LOTTRIDGE, PH. B., 32 Bolton Av., Cleveland.
Normal School.

MARY LOUISE GRACE LOTTRIDGE, PH. B., 32 Bolton Av., Cleveland.

LURA ELIZABETH LOVELAND, A. B., Middlefield.
Teacher in Middlefield Public School, 1897—

SARAH BEDELL MACDONALD, A. B., 1665 Lamont St., Cleveland.
Teacher in Primary Department, Wade Park Home School, Cleveland, O.

MARY ALICE PAGE, A. B., East Cleveland.
Teacher, Euclid, Ohio, 1897—

HELEN JANE PAUL, PH. B., Adams House, Waltham, Mass.

NINA MAY ROBERTS, A. B., 30 Sayles St., Cleveland.
Graduate School, and Assistant in English, W. R. U.

ELIZABETH OLMSTEAD STOCKTON, A. B., Conneaut.
Principal, High School.

SARAH VIRGINIA STOWELL, PH. B., 17 Cutler St., Cleveland.
Normal School.

FLORENCE WATERMAN, A. B., 85 Streator Av., Cleveland.
Graduate School, and Teacher in Wade Park Home School, 1897—

CAROLINE ELMINA WATERS, PH. B., 822 Doan St., Cleveland.
Assistant Librarian W. R. U.

MAUDE WINSHIP, B. L., 100 Kensington St., Cleveland.

MARTHA AUGUSTA WITHYCOMBE, B. L., 126 Cedar Av., Cleveland.
Normal School.

ERRATA.

The following names should have been included in the list of members of the Adelbert College faculty giving additional instruction in the College for Women.

HARRY WILMOT WOODWARD, A. M., 102 Adelbert St.

Instructor in Physics.

A. B. Adelbert Coll., 1890; A. M., 1895; Case School of Applied Science, 1894-96; Assistant in Physical Laboratory, Adelbert Coll., 1894-97; Instructor in Physics, 1897—

CARL B. JAMES, B. S., (Baldwin University), 54 Bigelow St.

Assistant in Biological Laboratory.

In the same list the title after Herbert Tetlow's name should be *Assistant in Biology.*

The Department of Graduate Instruction.

CALENDAR.

1897.		
23 Sept.	Thursday	First Term begins.
25 Nov.	Thursday	Thanksgiving Day.
23 Dec.	Thursday	Winter Recess begins.
1898.		
3 Jan.	Monday	Winter Recess ends.
27 Jan.	Thursday	Day of Prayer for Colleges.
28 Jan.	Friday	Examinations begin.
5 Feb.	Saturday	First Term ends.
7 Feb.	Monday	Second Term begins.
7-13 April	Thursday-Wednesday	Easter Recess.
10 June	Friday	General Examinations begin.
19 June	Sunday	Baccalaureate Sermon,
22 June	Wednesday	COMMENCEMENT.

SUMMER VACATION OF THIRTEEN WEEKS.

22 Sept.	Thursday	First Term begins.
24 Nov.	Thursday	Thanksgiving Day.
22 Dec.	Thursday	Winter Recess begins.

Department of Graduate Instruction.

THE privileges of the Graduate Department are open, without distinction of sex, to graduates of this and other universities and colleges of good standing who present satisfactory evidence of character and scholarship. In exceptional cases, and by special permission, other persons of suitable age and attainments may also be received as students.

The work of the department is under the general supervision of an Executive Committee, consisting, this year, of Professors R. W. Deering (Dean), H. N. Fowler, and F. P. Whitman. Persons desiring to do graduate work are invited to confer or correspond with any member of this committee.

Applications for admission as graduate students may be received at any time, but should be presented, if possible, at least a month before the beginning of the academic year. This is advisable because books and apparatus for special work must often be imported from Europe. All such applications should be made to the Dean of the Graduate Faculty, and should be accompanied, except in the case of graduates of this university, by diplomas or such other official certificates as will satisfy the Executive Committee as to the student's character and attainments. Applicants admitted as students must then register with the Dean and file statements of the courses of study they intend to pursue, indicating also the degrees, if any, for which they wish to be candidates. Eligible students who do not wish to apply for higher degrees may be admitted and registered as resident graduates.

Instruction is given by lectures, seminaries, recitations and conferences with instructors, by specially directed courses of reading or research, by work in laboratories, etc.

The library facilities available are: (1) Hatch Library (about 45,000 books and pamphlets), with a very full periodical list, with good collections, especially in the classics and history, and unusually well equipped in Germanic philology and literature, including the library (12,000 vols.) of the late Prof. Wilhelm Scherer of the University of Berlin; (2) Library of the College of Women, a small, well selected collection for general work; (3) the Case Library (42,000 vols.), well supplied with periodicals and general literature, and offering excellent facilities for study in the fine arts, in political economy and sociology, and in the sciences, especially chemistry and botany; (4) the Cleveland Public Library (125,000 vols.), well supplied with Shakesperiana, with modern German literature, with works on history, art and archæology.

The regular fee for instruction for each graduate student is seventy-five dollars a year. This does not include special laboratory fees, for which students may apply to the instructors concerned.

A limited number of scholarships has been established and will be awarded upon presentation of satisfactory evidence of scholarly ability. The recipients of these scholarships may be called upon to render service to the University.

The degrees conferred by the Trustees, on recommendation of the Graduate Faculty, are MASTER OF ARTS and DOCTOR OF PHILOSOPHY.

The degree of Master of Arts will be conferred on accepted candidates who shall have pursued successfully, in residence and under the direction of the Faculty, advanced courses of liberal study equal in amount to the work of one collegiate

year—ordinarily the equivalent of four courses aggregating twelve hours weekly. These courses must be divided among at least three different subjects. Detailed information regarding courses of study may be obtained from the Dean of the Faculty. The degree will also be conferred without residence upon graduates, of the class of 1893 or before, of Adelbert College or the College for Women, provided the candidate sustain satisfactory examination in the courses prescribed, and present either a thesis on a subject assigned or other sufficient evidence of fitness to receive the degree—such as printed essays.

The degree of Doctor of Philosophy will be conferred only on persons who have previously received a Bachelor's degree either from this or from some other university or college of good standing. The candidate must have pursued courses of advanced study mainly of university as distinguished from college grade. He must have shown special ability in one branch of such study (major) and high attainments in two other branches (minors), as determined by written or oral examinations or both. A major course will be regarded as demanding at least three hours a week, for two years, of purely graduate instruction, together with extensive private reading or research under the direction of the instructor. A minor course will be considered equivalent to at least three hours a week, for one year, of graduate instruction, or to six hours, for one year, of the higher electives of the academic curriculum, together with private reading as may be assigned. The candidate must have submitted to the Graduate Faculty a thesis, which shall be accepted as evincing powers of research and independent investigation. After its acceptance he must deposit at least fifty copies of his thesis, printed either in full or in abstract as may be required, with the Dean of the Graduate Faculty. The degree will be granted to no one

who does not possess a good reading knowledge of French and German and, unless specially excused, of Latin. The degree is not given merely for faithful study of courses taken or text-books assigned, but as evidence of special ability in some chosen field; hence no definite term of study can be specified. Ordinarily at least two years are necessary and often a longer time is advisable. Part of this time may be spent in advanced study at some other institution of high standing in this country or abroad; the last year, at least, must be spent in residence here.

In cases where the undergraduate courses already taken are not equivalent to those given in this university, or where, for any reason, previous preparation is inadequate, students must do additional undergraduate work or prolong the term of graduate study, as may be required, before receiving higher degrees.

"The Francis G. Butler Publication Fund" is available to graduate students for the publication of the results of original research in the field of American history.

FACULTY AND INSTRUCTORS.

Arranged with the exception of the President and Dean, in the order of college graduation.

CHARLES FRANKLIN THWING, D. D., LL. D., *President*, 55 Bellflower Av.

A. B., Harvard Coll., 1876; Andover Theological Seminary, 1876-79; D. D., Chicago Theological Seminary, 1888; LL. D., Illinois Coll. and Marietta Coll., 1894; President Adelbert Coll. and Western Reserve Univ., 1890—

ROBERT WALLER DEERING, PH. D., 80 Cornell St.

Professor of Germanic Languages and Literature.

Centre Coll., 1879-80; Vanderbilt Univ., 1880-85; A. M., 1885; Instructor in German, Vanderbilt Univ., 1885-86; Univ. of Leipzig, 1886-89; Ph. D., 1889; Adjunct Professor of Germanic Languages and Literature, Vanderbilt Univ., 1889-92; Professor of Germanic Languages and Literature, College for Women, 1892—

LEMUEL STOUGHTON POTWIN, D. D., Absent for the year.

Professor of the English Language and Literature.

A. B., Yale Coll., 1854; Tutor in Yale, 1858-60; D. D., Yale, 1886; Professor of Latin, Western Reserve Coll. and Adelbert Coll., 1871-92; Professor of English, 1892—

CHARLES JOSIAH SMITH, A. M., 35 Adelbert St.

Professor of Mathematics.

A. B., Western Reserve Coll., 1870; A. M., 1873; Professor of Mathematics and Perkins Professor of Natural Philosophy and Astronomy, Western Reserve Coll., 1880-82; Professor of Mathematics, Adelbert Coll., 1882—

MARY NOYES COLVIN, PH. D., Guilford House

Professor of Romance Languages.

Mt. Holyoke Seminary, 1868-72; Paris, 1874-75; Instructor in French and Latin, Worcester High School, 1877-80; Lady Principal of Genesee (N. Y.) State Normal School, 1881-83; Zurich and Geneva, 1884-87; Ph. D., University of Zurich, 1888, The Sorbonne, L'Ecole des Hautes Etudes, L'Ecole de Chartes, College de France, 1888-89; Secretary Bryn Mawr Preparatory School, Baltimore, 1889-93; Italy and Spain, 1893-94; Professor of Romance Languages, College for Women, 1893—

FRANK PERKINS WHITMAN, A. M., 79 Adelbert St.

Professor of Physics and Astronomy.

A. B., Brown Univ., 1874; A. M., 1877; Brown Univ., 1879; Johns Hopkins Univ., 1879-80; Professor of Physics, Rensselaer Polytechnic Inst., 1880-85; Professor of Physics, Adelbert Coll., 1885—

EMMA MAUD PERKINS, A. B., 121 Adelbert St.

Professor of Latin.

A. B., Vassar Coll., 1879; Instructor in Classics, Central High School, Cleveland, 1879–92; Associate Professor of Latin, College for Women, 1892–93; Professor of Latin, 1893—

CHARLES HARRIS, PH. D., 21 Cutler St.

Professor of German.

A. B., Indiana Univ., 1879; Ph. D., Univ. of Leipzig, 1883; Instructor in German, Academic Department of Vincennes Univ., 1883–86; Professor of French and German, Southern Illinois State Normal School, 1886–88; Professor of German, Oberlin Coll., 1888–93; Professor of German, Adelbert Coll., 1893—

STEPHEN FRANCIS WESTON, A. M., 102 Adelbert St.

Associate Professor of Political and Social Science.

A. B., Antioch Coll., 1879; A. M., 1885; Univ. of Mich., 1885–87; School of Political Science, Columbia Coll., 1890–92; Assistant in Economics, Columbia Coll., 1892–94; Associate Professor of Political and Social Science, Western Reserve University, 1894—

MATTOON MONROE CURTIS, PH. D., 43 Adelbert St.

Professor of Philosophy.

A. B., Hamilton Coll., 1880; B. D., Union Theological Seminary, 1883; A. M., Hamilton Coll., 1883; Pastor at Hastings-on-Hudson and at Cleveland, 1883–88; University of Leipzig, 1888–91; Ph. D., 1890; Professor of Philosophy, Adelbert Coll., 1891—

FREDERICK MORRIS WARREN, PH. D., 6 Hayward St.

Professor of Romance Languages.

A. B., Amherst Coll., 1880; Instructor in Modern Languages, Western Reserve Coll. and Adelbert Coll., 1881–83; Sorbonne, 1884–86; Instructor and Associate in Modern Languages, Johns Hopkins Univ., 1886–91; Ph. D., Johns Hopkins Univ., 1887; Professor of Romance Languages, Adelbert Coll., 1891—

HAROLD NORTH FOWLER, PH. D., 19 Cutler St.

Professor of Greek.

A. B., Harvard Coll., 1880; Classical Master in Marston's University School, Baltimore, 1880–82; Johns Hopkins Univ., 1880–81; American School of Classical Studies in Athens, 1882–83; Univ. of Berlin, 1883–84; Univ. of Bonn, 1884–85; Ph. D., 1885; Instructor in Greek, Latin and Archæology, Harvard Coll., 1885–88; Instructor in Latin, Phillips Exeter Acad., 1888–90; Professor of Latin, Phillips Exeter Acad., 1890–92; Professor of Greek, Univ. of Texas, 1892–93; Professor of Greek, College for Women, 1893—

FRANCIS HOBART HERRICK, PH. D., D. SC., 7 Cutler St.

Professor of Biology.

A. B., Dartmouth Coll., 1881; Ph. D., Johns Hopkins Univ., 1888; D. Sc., Western Univ. of Pennsylvania, 1897; Instructor in Biology, Adelbert Coll., 1888–91; Professor of Biology, 1891—

HENRY PLATT CUSHING, M. S., 260 Sibley St.

Professor of Geology.

Ph. B., Cornell Univ., 1882; Cornell Univ., 1882–83; School of Mines, Columbia Coll., 1883–84; Cornell Univ., 1884–85; M. S., 1885; Instructor in Geology, Chemistry and Physics, State Normal School, Mankato, Minn., 1885–91; Univ. of Munich, 1891–92; Instructor in Geology and Chemistry, Western Reserve University, 1892–93; Associate Professor of Geology, 1893–95; Professor of Geology, 1895—

OLIVER FARRAR EMERSON, PH. D., 50 Wilbur Pl.

Professor of Rhetoric and English Philology.

A. B., Iowa Coll., 1882; A. M., 1885; Superintendent of Schools, Grinnell, Ia., 1882–84; Muscatine, Ia., 1884–85; Principal of the Academy of Iowa Coll., 1884–88; Goldwin Smith Fellow in English, Cornell Univ., 1888–89; Instructor in English, Cornell Univ., 1889–91; Ph. D., 1891; Assistant Professor of Rhetoric and English Philology, 1892–96; Professor of Rhetoric and English Philology, Adelbert Coll., 1896—

SAMUEL BALL PLATNER, PH. D., (Absent for the year.)

Professor of Latin and Instructor in Sanskrit.

A. B., Yale Coll., 1883; Ph. D., 1885; Instructor in Latin and French, Adelbert Coll., 1885–90; Univ. of Berlin and Rome, 1889–90; Assistant Professor of Latin, Adelbert Coll., 1890–92; Professor of Latin, 1892—

HENRY ELDRIDGE BOURNE, B. D., 27 Cutler St.

Professor of History.

A. B., Yale Coll., 1883; Principal High School, Thomaston, Ct., 1883–84; B. D., Yale Divinity School, 1887; Hooker Fellow, Yale Divinity School, 1887–88; Teacher of History and Psychology, Norwich (Ct.) Free Acad., 1889–92; Professor of History and Instructor in Philosophy, College for Women, 1892–93; Professor of History, 1893—

ABRAHAM LINCOLN FULLER, PH. D., 45 Wilbur Pl.

Professor of Greek.

A. B., Dartmouth Coll., 1885; A. M., 1888; Univ. of Leipzig, 1885–87; Univ. of Erlangen, 1887–88; Ph. D., 1888; Instructor in Latin and French, Adelbert Coll., 1889–90; Professor of Greek, College for Women, 1890–93; Professor of Greek, Adelbert Coll., 1893—

ALMA BLOUNT, PH. D., Guilford House

Instructor in English.

B. S., Wheaton Coll., 1886; A. B., 1890; Instructor in English, 1886–93; Cornell University, 1893–94; Scholar in English Philology, 1894–95; Fellow in English, 1895–96; Ph. D., 1896; Instructor in English, College for Women, 1896—

HERBERT AUSTIN AIKINS, PH. D., 25 Cutler St.

Professor of Philosophy.

A. B., Univ. of Toronto, 1887; Instructor, Univ. of Southern California, 1888; Yale Univ., 1888–91; Lecturer on History of Philosophy, Yale Univ., 1890–91; Ph. D., Yale, 1891; Professor of Logic and Philosophy, Trinity Coll., N. C., 1891–93; Honorary Fellow Clark Univ., 1892–93; Professor of Philosophy, College for Women, 1893—

VERNON JUDSON EMERY, A. M., 8 Adelbert Hall.

Instructor in Latin.

A. B., Ohio State Univ., 1887; Instructor in Latin, Univ. of Nebraska, 1888–91; A. M., Univ. of Nebraska, 1890; Univ. of Berlin, 1891–92; Assistant in Latin, Ohio State Univ., 1892–93; Assistant in Latin, Univ. of Chicago, 1893–94; Instructor in Latin, Adelbert Coll., 1894—

ANNA HELENE PALMIÉ, PH. B., 56 Mayfield St.

Professor of Mathematics.

Ph. B., Cornell Univ., 1890; Fellow in Mathematics, 1890–91; Instructor in Mathematics and German, College for the Training of Teachers, New York City, 1891–92; Instructor in Mathematics, College for Women, 1892–93; Associate Professor of Mathematics, 1893–95; Professor of Mathematics, 1895—

WILLIAM HENRY HULME, PH. D., 95 Cornell St.

Associate Professor of English.

A. B., Vanderbilt Univ., 1890; Assistant in Greek, 1889–90; Univ. of Leipzig, 1891–92; Univ. of Jena, 1892–93; Univ. of Freiburg, 1893–94; Ph. D., 1894; Instructor in German, College for Women, 1894–96; Associate Professor of English, 1896—

EDWIN VERNON MORGAN, A. M., 14 Adelbert Hall.

Instructor in History.

A. B., Harvard Coll., 1890; A. M., 1891; Universities of Berlin and Oxford, 1891–92; Assistant in History and Proctor, Harvard Coll., 1892–94; Univ. of Berlin, 1894–95; Instructor in History, Adelbert Coll., 1895—

ROBERT MACDOUGALL, PH. D., 102 Adelbert St.

Instructor in Philosophy.

A. B., McGill Univ., 1890; Harvard Univ., 1892–95; A. M., 1893; Morgan Fellow, 1894; Ph. D., 1895; Walker Fellow, 1895–96; Univ. of Berlin and Sorbonne, 1895–96; Instructor in Philosophy, Adelbert Coll., 1896–97; Associate Professor of Pedagogy, Western Reserve University, 1897—

EDWARD STOCKTON MEYER, JR., PH. D., 844 Logan Av.

Instructor in German.

B. L., Adelbert Coll., 1893; Univ. of Leipzig, 1893–94; Univ. of Heidelberg, 1894–96; Ph. D., 1896; Instructor in German, Western Reserve University, 1896—

STUDENTS.

NAME.	RESIDENCE.	ADDRESS.
SARAH ALVIRA ADAMS	*East Cleveland*	236 Superior St.

A. B., College for Women, Western Reserve University, 1896. I yr. English Literature.

MAURITA BARTHOLOMEW	*Cleveland*	2238 Euclid Av.

Cook County Normal School, 1895. I yr. Chemistry, Geology, Pedagogy, History of Art.

GEORGE ALBERT BELLAMY	*Grand Rapids, Mich.*	141 Orange St.

A. B., Hiram College, 1896. II yr. Economics, German.

ISABEL BEVIER	*Plymouth, O.*	Guilford House

Ph. B., University of Wooster, 1885. I yr. Chemistry, Biology.

ARTHUR HOLBROOK BILL	*Cleveland*	853 Logan Av.

A. B., Adelbert College, 1897. I yr. Biology, Physics, Philosophy.

ALCID C. BURRELL	*Indianapolis, Ind.*	2250 Euclid Av.

A. B., Mount Union College, 1885, A. M., 1888. I yr. Economics, Psychology, Chemistry, Physics.

MORRIS WILLIAM CROLL	*Cleveland*	454 Dunham Av.

A. B., Harvard University, 1894, A. M., 1895. II yr. English Philology.

JACOB HENRY GOLDNER	*Chagrin Falls, O.*	

A. B., Hiram College, 1896. I yr. Economics.

ETHEL LYNN GRISTE	*Twinsburg, O.*	22 Anndale Av.

B. L., College for Women, Western Reserve University, 1896. I yr. French, English Literature, German, History of Art.

FLORA BELLE HERR	*Cleveland*	57 Marvin Av.

B. A., University of Indiana, 1896. I yr. English, Philosophy, History.

DAVID EUGENE HOLMES	*Cleveland*	102 Adelbert Av.

A. B., Illinois College, 1883, A. M., 1886. III yr. English Literature.

CARL B. JAMES	*Cleveland*	21 Bigelow St.

B. S., Baldwin University, 1894. II yr. Biology.

HERMAN JULIUS LENSNER	*Saxonburg, Pa.*	771 Doan St.

A. B., Grove City College, 1893, A. M., 1896. II yr. English Philology, German Literature.

LULU STERRETT MACHWART *Cleveland* 48 Deering St.
B. S., Muskingum College, 1890. I yr. History, Philosophy, Pedagogy.

MARTHA WILHELMINA MUERMAN *Cleveland* 52 Huron St.
A. B., Vassar College, 1890. II yr. English Philology.

ARTIOS DIO NYE *Fields, O.*
A. B., Baldwin University, 1897. I yr. Latin, Greek, German.

NINA MAY ROBERTS *Cleveland* 30 Sayles St.
A. B., College for Women, Western Reserve University, 1897. I yr. English Philology, History, Chemistry.

CAROLINE ELEONORE ROEDER *Cleveland* 27 Oakdale Av.
III yr. German Literature.

STEPHEN DOUGLAS SANOR *Cleveland* 150 Hawthorne Av.
B. S., Mount Union College, 1889. I yr. Philosophy, History, Pedagogy.

RUTH PEET SMITH *Cleveland* 36 Dorchester Av.
A. B., College for Women, Western Reserve University, 1896. II yr. Greek.

JOHANN WILHARD SWANBECK *Cleveland* 434 Central Av.
Gymnasium, Jönköping, Sweden, 1887. II yr. Philosophy, Economics, Pedagogy.

SWEN EMIL SWANBECK *Cleveland* 849 Doan St.
Gymnasium, Jönköping, Sweden, 1888. II yr. Romance Philology, English Philology, German Literature.

WILLIAM JACKSON TRUESDALE *Cleveland* 257 Kennard St.
A. B., Ohio Wesleyan University, 1889. II yr. Philosophy, History.

FLORENCE WATERMAN *Geneva, O.* 95 Streator Av.
A. B., College for Women, Western Reserve University, 1897. I yr. Greek.

FREDERIC MARCUS WOOD *North Madison, O.* 9 Adelbert Hall
A. B., Adelbert College, 1897. I yr. Latin, French, Italian.

GRADUATES 25.

COURSES OF GRADUATE INSTRUCTION.

Courses marked with an asterisk (*) are undergraduate elective courses, but are open to graduate students, with the consent of the instructor and the approval of the Faculty. Hours for graduate work will be arranged to suit the convenience of instructor and student.

1. PHILOSOPHY; PSYCHOLOGY.

Professor CURTIS :—

1. *GREEK PHILOSOPHY AND ITS RELATION TO THE RISE OF CHRISTIANITY. 3 hours a week, first half-year.

   A review of the rise and trend of philosophic thought among the Greeks and Romans from about 600 B. C. to 500 A. D. The main points kept in view are : (a) how the early philosophers treated the problems of life and mind, and (b) how their treatment of these problems is related to the rise and development of Christian Doctrine. The works of Zeller, Marshall, Grote, Jowett, Ueberweg, Heinze, Ritter, Harnack, and Hatch are among the references.

2. *BRITISH PHILOSOPHY FROM BACON TO HUME. 3 hours a week, first half-year.

   Lectures, recitations, and private readings. The purpose of this course is to acquaint the student with the classics of British Empiricism by means of selections from Bacon's Advancement of Learning and Novum Organum, Hobbes' Leviathan, Locke's Essay Concerning Human Understanding, Berkeley's Principles of Human Knowledge, and Hume's Treatise of Human Nature. The course will bring forward the main problems of Modern Philosophy. Such features as are specially prominent today will be indicated and outlined. Among the general reviews of this period mention may be made of Morris' British Thought and Thinkers, Fraser's Selections from Berkeley, and Grimm's Zur Geschichte des Erkenntnisproblems von Bacon bis Hume.

3. THE PHILOSOPHY OF HERBERT SPENCER.

3 hours a week, second half-year.

A critical study of Spencer's elaboration of the principle and process of Evolution along with the application of Evolution to Philosophy. Selections from the following parts of his work are thus examined: First Principles, The Principles of Biology, The Principles of Psychology, and The Principles of Sociology. Lectures will be given with the aim of showing the historical development and present condition of evolutional thought. Digests and critical essays will be required for the purpose of bringing into prominence the main questions of Cosmology and the bearing of Evolution on Religious Thought. The more important handbooks for this study are Spencer's First Principles and Collins' An Epitome of the Synthetic Philosophy.

Or

4. THE PHILOSOPHY OF KANT. 3 hours a week, second half-year.

After the results of Hume's Philosophy have been reviewed, Kant's Critique of Pure Reason will be taken up and the object of knowledge carefully studied. This will be followed by a discussion of the Metaphysic of Morality, the Critique of Practical Reason, and the Critique of Judgment. For this course some knowledge of German may be advantageous. Watson's Selections from Kant furnishes a valuable outline.

5. *INTRODUCTION TO PHILOSOPHY.

3 hours a week, second half-year.

This course is designed as a systematic review of the content of Philosophy. It will probably be given in the form of lectures by the instructor and reports on assigned topics by the students. Ladd's Philosophy of Mind, and Introduction to Philosophy; Royce's Spirit of Modern Philosophy; Paulsen's Introduction to Philosophy; Mill's Examination of Hamilton and Külpe's Einleitung in die Philosophie are among the books of reference.

6. INTRODUCTION TO THE HISTORY AND PHILOSOPHY OF RELIGION.

3 hours a week, second half-year.

The aim of this course is to present Religion in its psychological, historical, critical, and constructive aspects. The course will

be based upon Menzies' History of Religion and Principal Caird's Philosophy of Religion.

7. SOCIOLOGY IN THE LIGHT OF ANTHROPOLOGY.
3 hours a week, throughout the year.
The main problems and bearings of anthropology will be discussed in systematic order and their sociological import noted in such works as those of Morgan, Brinton, Quatrefages, Taylor, Prichard, Darwin, Wallace, Ranke and Ratzel. Then a course of lectures will outline a more systematic treatment of Sociology based upon Anthropology, after which certain aspects of the works of Comte, Buckle, Spencer, Ward and Giddings will be discussed.

Professor AIKINS:—

8. *PSYCHOLOGY. 3 hours a week, first half-year.
The neural mechanism: the empirical laws of its action, and the facts of consciousness explained by them; the elements of knowledge; the nature of concepts and judgments. The course is based on James' Smaller Psychology and Sanford's Laboratory Course in Psychology.

9. *THEORY OF KNOWLEDGE. 3 hours a week, first half-year.
The reading and discussion of Locke's Essay Concerning Human Understanding, Berkeley's Principles of Human Knowledge, Selections from Hume's Treatise of Human Nature, and if time permit, Newman's Grammar of Assent or Balfour's Defense of Philosophic Doubt.

10. *HISTORY OF ANCIENT PHILOSOPHY.
3 hours a week, first half-year.
Lectures once a week upon the development of speculative thought amongst the Greeks from the mythology of Homer and Heriod to New Platonism and the beginnings of Christianity; the reading and discussion twice a week of Plato.

11. *HISTORY OF MODERN PHILOSOPHY.
3 hours a week, second half-year.
The course is based upon Royce's Spirit of Modern Philosophy.

12. MODERN PHILOSOPHY. 2 hours a week, through the year.
A minute and critical study of Hume, Kant, Schopenhauer or Lotze.

11. PEDAGOGY.

Professor BOURNE:—

1. *EDUCATION SINCE THE RENAISSANCE.

3 hours a week, second half-year.

With a brief review of ancient and mediæval methods. This course treats of one important phase of the history of modern civilization. Its special aim will be to prepare students for the practical work of teaching, by examining the different systems of education which have been developed, and by comparing them with methods now in use. Compayré's History of Pedagogy will be used as a basis, with readings from Ascham, Milton, Locke, Rousseau, Pestalozzi, Froebel, etc.

Associate Professor MACDOUGALL:—

2. *HISTORY OF EDUCATION. 3 hours a week, first half-year.

The course will begin with a sketch of ancient ideals of education, Greek and Roman, and the relation of their educational systems to the social-political life. It will then consider the change in educational system and method due to the transformation of social and religious ideals in the middle ages. From the time of the Reformation the topic will be taken up in more detail. The rise of universities, the growth of common schools, educational reform, the establishment of national school systems, and like movements will be studied with a view to obtaining a coherent knowledge of the rise and development of existing principles and methods of education.

3. *EDUCATIONAL CLASSICS. 3 hours a week, second half-year.

This course is based upon a critical reading of as many of the educational classics as time will allow. These will be Comenius, Rousseau, Froebel, Pestalozzi, Spencer, with references to Ascham, Locke, Herbart and others. The aim of the course is to obtain a clear idea of the fundamental principles of these successive reformers and to follow the progress of educational ideals. Lectures, discussions, reference reading and reports on special topics.

Or

4. EDUCATION IN THE UNITED STATES.

3 hours a week, first half-year.

The Colonial Period; The educational spirit of the Puritans; Elementary schools; The founding of colleges; The National Period; Centralization; Horace Mann and his Massachusetts schools; Henry Barnard and education in Connecticut; The public school system of the United States; Higher education; Secondary schools; The growth of universities; Technical and Manual training schools; The curriculum; School organization; University extension; Graduate scoools; Women's colleges. Boone's Education in the United States; Barnard's Journal; Reports of the Bureau of Education; periodical literature.

5. *PEDAGOGICAL THEORY. 3 hours a week, first half-year.

A discussion of the nature and aims of education, and of general pedagogical methods: Child nature, the general question of incentives and deterrents, interest, imitation, ripening of instincts, rewards and punishments, character in education, special education, relative value of studies, education of the voluntary attention, feeling and emotion in education. Lectures, theses, and private reading.

6. *PSYCHOLOGY IN EDUCATION. 3 hours a week, second half-year.

This course requires no text-book, but students will be expected to coöperate with the instructor in consulting and making reports upon literature on the following topics: (a) The Mutual Relations of Mind and Body: The Reflex Arc, Sensory and Motor Education, Defects of Sight and Hearing, Manual Training. (b) The Mind of the Child and its Development. (c) Growth of the Nervous System; Nascent Periods; Physical Measurements; Sex in Development; Neuroses of Childhood and Development; Adolescence; Sequence in Education; Fatigue, Overpressure, Neurasthenia, Stimulants. (d) Plasticity of the Nervous System: Habit, Association, Memory and its improvement. (e) Apperception and Interest, Imitation, Attention, Suggestion (Hypnotism), Will and its training. (f) Emotional Health, Morbid Types, Conscience. (g) Belief; The psychological aspect of Scepticism.

7. NATIONAL SCHOOL SYSTEMS. 2 hours a week, first half-year.
School systems of Europe; the German system; France; the schools of England; the recent movement in Norway. The growth of the modern idea of system; school organization; relation of the school to the state. Study of typical schools in organization and method. Our own school system. Recent movements of reform. Lectures, reports in literature and statistics, private reading, discussions.

8. PEDAGOGICAL SEMINARY. 2 hours a week, second half-year.
For advanced students only. Reading on special topics, under guidance of the instructor, and original investigation. Reports of literature on recent changes and reforms. Discussion of contemporary topics.

III. HISTORY; POLITICAL AND SOCIAL SCIENCE.

Professor BOURNE:—

1. *HISTORY OF FRANCE. 3 hours a week, second half-year, 1898–9.
From the fall of the Carolingians to the middle of the eighteenth century. This course concerns the growth of French institutions, and especially the development of the French monarchical system. Other phenomena of French history—feudal society, the rise of the towns, commerce and industry—are treated in connection with this principal subject.

2. *MODERN EUROPEAN HISTORY SINCE 1789.
3 hours a week, throughout the year.
The French Revolution as a social and political movement, the Empire, the growth of the national movements in Germany and Italy, industrial and social changes, the development of the democratic spirit, will be the subjects chiefly investigated.

3. THE FRENCH GOVERNMENT FROM THE ASSEMBLY OF THE NOTABLES TO THE OVERTHROW OF THE DIRECTORY.
2 hours a week, either half-year.
This course will be based on contemporary memoirs and documents, and upon the authorities, chiefly French, whose works cover special phases of the Revolutionary movement.

Or

4. THE COMMITTEE OF PUBLIC SAFETY.

2 hours a week, either half-year.

This course will imply a good knowledge of the general history of the Revolution. It will consist of studies in the Recueil des actes du Comité de salut public, supplemented by the Moniteur, Buchez et Roux—Histoire Parlementaire, etc. Some other phase of the middle period of the Revolution, may be taken, if desired.

5. *EUROPEAN DISCOVERY AND COLONIZATION.

3 hours a week, first half-year, 1898–9.

This course will begin with a brief review of the history of Mediæval Travel and of the progress of geographical knowledge. This will be followed by a thorough investigation of the discoveries of the fifteenth and sixteenth centuries, of the origin and various phases of the colonial system, and of the effects of the discoveries upon Europe.

MR. MORGAN:—

6. *THE RENAISSANCE AND THE REFORMATION IN EUROPE, FROM THE FALL OF CONSTANTINOPLE TO THE CLOSE OF THE COUNCIL OF TRENT, 1453-1563. 3 hours a week, first half-year.

This is the period of the decline of mediæval and the rise of modern institutions. The instruction, which will be conducted by recitations and informal lectures, will trace the development of those forces which were combined in the Protestant revolution of the sixteenth century. Three theses upon selected subjects will be required from each student. Burckhardt's Renaissance in Italy, Symond's book with the same title, and Creighton's History of the Papacy will serve as a basis for the work.

7. *AMERICAN COLONIAL HISTORY TO 1783.

3 hours a week, first half-year.

The aim of this course is a thorough study of the discovery and settlement of North America. The purpose and nature of colonies, the character and aims of the colonists, the methods

of government in use are duly considered. Especial attention is given to the constitutional development of the English colonies, their relations to the mother country, and their growth toward independence and union. The work is based upon H. C. Lodge's A Short History of the English Colonies in America, with constant use of the sources and more extended treatises.

8. *POLITICAL HISTORY OF THE UNITED STATES FROM 1783 TO OPENING OF THE CIVIL WAR.

3 hours a week, second half-year.

Johnson's American Politics, Hart's Formation of the Union, Wilson's Division and Reunion, Channing's The United States of America, with parallel readings in more extended works, such as those of von Holst, Henry Adams, McMaster, Schouler, Rhodes, the volumes of the American Statesmen and American Commonwealth Series, Prof. Johnston's articles in Lalor's Cyclopædia of Political Science, etc. Recitations, informal lectures, three special reports upon topics assigned to each student individually. The aim of this course will be to gain a familiarity with our political history, the rise of parties and the growth of institutions.

9. *THE UNITED STATES SINCE 1865.

3 hours a week, second half-year.

Especial attention is given to the political and social problems arising since the Civil War. Bryce's American Commonwealth will be read and discussed. Reference will be made to books of a similar character. It is very desirable that students indending to take this course shall take course 8 first.

10. ENGLISH POLITICAL AND CONSTITUTIONAL HISTORY.

3 hours a week, first half-year.

From the Norman Conquest to the Revolution of 1689. Especial attention will be given to the development of English political institutions. The work will be based on Gardiner's Students' History of England, with constant reference to the Constitutional Histories of Stubbs and Taswell-Langmead, Stubbs' Select Charters, and to the more important general works covering this period.

11. SOURCES AND LITERATURE OF THE HISTORY OF THE UNITED STATES. 1 hour a week, throughout the year.
Lectures and papers from the students.

Associate Professor WESTON:—

12. *ECONOMIC HISTORY OF ENGLAND.
3 hours a week, first half-year, 1898–9.
A study of the economic conditions and industrial development of England, from the time of the Conquest. Occasional notice will be taken of contemporaneous conditions on the continent. One object of the course will be to obtain a better appreciation of the social problems of to-day. Lectures, readings and reports. Each student will be required to prepare a paper upon some subject to which he shall have given special study.

13. *ECONOMIC HISTORY OF THE UNITED STATES.
3 hours a week, first half-year.
A study of the industrial development of the United States from colonial times to the establishment of the present industrial system, followed by a study of special conditions and problems arising from the present system and methods—as crises, trusts and corporations, transportation, relation of public bodies to industries, labor problems, solutions and legislation. Readings, reports and papers, with occasional lectures.

14. *THE STATE. 3 hours a week, first half-year.
A sketch of the leading theories of the State from the time of Aristotle, in respect to origin, nature and functions. The true philosophy of the State. The relation of the State to government and law. Different types of states. Basis of the study, Willoughby's The Nature of the State.

15. *CIVIL GOVERNMENT. 3 hours a week, first half-year, 1898–9.
A study of the national, state and municipal governments of the United States. Comparison will be made with other types and systems. Bryce's American Commonwealth (abridged edition), supplemented by readings, reports and lectures.

16. *MONEY AND BANKING. 3 hours a week, second half-year, 1898–9.
A study of the principles of money and banking, illustrated by the history of money and banking in the United States, together with a comparative study of the best banking systems of other countries. Particular attention will be given to the history of bimetalism. Lectures and papers.

17. *THE TARIFF AND REVENUE SYSTEM OF THE UNITED STATES. 3 hours a week, second half-year.
An historical study of tariffs, and of the development of the system and theory of protection. The history and theory of free trade will receive attention. Also the public debt in its relation to revenue and tariff. Chiefly readings, reports and papers, with occasional lectures.

18. *SOCIAL THEORIES. 3 hours a week, second half-year, 1898–9.
A history and criticism of the doctrines of those ideal social reforms which seek to change existing economic conditions and relations by more or less violent changes in the political structure of society—as socialism, communism, nihilism, and anarchism. Lectures and papers.

19. *SOCIAL PROBLEMS. 3 hours a week, second half-year.
Pauperism and crime. Their causes, methods of relief and prevention, considered historically, theoretically and practically. Lectures, reports and papers.

20. ECONOMIC THEORIES. 3 hours a week, through the year.
Their history, beginning with the Mercantilists. The progress of economic thought and the leading doctrines of the different schools. Selected portions of the writings of the leading economists will be studied. Lectures and special readings.

IV. CLASSICAL PHILOLOGY.

Professor PLATNER:— (Absent for the year.)

1. SANSKRIT. 3 hours a week, throughout the year, 1898–9.
An elementary course, designed primarily for those students who intend to become teachers of the classics. The text-books are Whitney's Grammar and Lanman's Reader.

Professor FULLER:—

2. ENCYCLOPÆDIA AND METHODOLOGY OF CLASSICAL PHILOLOGY. 3 hours a week, second half-year.

Aiming to give an acquaintance in outline with the entire subject of Classical Antiquity and to define the relation of the several parts to the whole and to each other. Books: Freund's Triennium Philologicum; Reinach, Manuel de la philologie classique; Boeckh, Encyclopædie und Methodologie der philologischen Wissenschaften; Iwan von Müller's Handbuch der klassischen Altertumswissenshaft, and special works on single topics.

3. *IDYLLIC POETRY. 2 hours a week, first half-year.

Critical study of the text and history of the writings of Theocritus, Bion, and Moschus, and their imitators. Mimes of Herondas.

4. *ATHENIAN DRAMA. 3 hours a week, first half-year.

Selected dramas of Euripides, Sophocles, Æschylus, and Aristophanes. This course will aim to promote a careful comparison of the methods and spirit of the three great tragedians. Some of the more unusual idioms and the more prominent questions of text-criticism will be discussed.

5. GREEK ANTIQUITIES. 3 hours a week, second half-year.

A study of Greek Politics, War, Private Life, Religion and Culture, using as text-books the Manuals and Handbooks of Hermann, Blümer, Iwan von Müller, etc.

6. *PHILOSOPHY. 3 hours a week, first half-year.

Fragments of the pre-Socratic Philosophers (Diogenes Laertius, de vitis, dogmatibus et apophthegmatis philosophorum; Ritter et Preller, Fragmenta Philosophiæ Græcæ), and Selections from Plato.

7. *GREEK PROSE COMPOSITION. 1 hour a week, first half-year.

An advanced course, the special features of which will be determined by the acquirements and needs of the class. Text-books: Sidgwick's Greek Prose Composition; Goodwin's Greek Moods and Tenses.

8. GREEK ORATORY. 3 hours a week, second half-year.

The development of Oratory. A representative selection from each of the Attic orators, with especial attention to stilistic differences. Incidental study of the civil and criminal law and history involved.

Courses 2 and 5 will under no circumstances be given to any student who has not a good working knowledge of French and German. The other courses may be taken as minors only when they are being given to an undergraduate elective class.

Professor FOWLER:—

9. INTRODUCTION TO GREEK EPIGRAPHY.

3 hours a week, first half-year.

A selection of Greek inscriptions will be read illustrating more especially the history, institutions, and social customs of the Athenians. Of inscriptions valuable for their form rather than their contents, a number will be studied to illustrate the history of the Greek alphabet and those dialect features which are prominent in Homer, Herodotus and other authors. Text-books will be Röhl's Imagines Inscriptionum Antiquissimarum, Roberts' Introduction to Greek Epigraphy, and Dittenberger's Sylloge Inscriptionum Græcarum.

10. PLATO'S REPUBLIC AND ARISTOTLE'S POLITICS.

3 hours a week, first half-year.

Selections from these works will be read and studied for their contents rather than their language, with discussion of Greek forms and theories of government. (Alternates with course 9.)

11. *ARCHÆOLOGY. 3 hours a week, second half-year.

Extracts from the description of Olympia in Pausanias will be read and discussed, with full illustrations from the great excavations, and a topical study of architecture and sculpture will be pursued. The object of the course is to acquaint the student with the great monuments of art, and to stimulate the faculty of independent observation and criticism. Text-books required: Schubart's Pausanias, Collignon's Manual of Archæology.

12. *HISTORY. 3 hours a week, second half-year.

Seminary work in the Works of Herodotus, Thucydides, Xenophon, The Historicorum Græcorum Fragmenta, and post-classical Historians.

Professor Fowler will also give instructions, if desired, in the history of Greek Vase Painting, in the later Greek Philosophy, and in Modern Greek, the details of the work to be determined after conference with the students.

Professor PLATNER:— (Absent for the year.)

13. *ROMAN ARCHÆOLOGY. 3 hours a week, first half-year, 1898-9.

Topography and monuments of Ancient Rome. The purpose of this course is to present an outline of the growth of the city, its buildings and monuments, to study with care some of the more important remains by means of plans and photographs, and to obtain as vivid a picture as possible of the actual environment of the Romans at different periods. The instruction is chiefly in the form of lectures and conferences. A considerable archæological apparatus has been accumulated during the past three years, consisting of about 500 photographs, and many of the standard works of recent years. The hand-book used as a guide is Richter's Topographie der Stadt Rom, and constant reference is made to the following works: Corpus Inscriptionum Latinarum with Ritschl's Priscæ Latinitatis Monumenta Epigraphica, Middleton's Remains of Ancient Rome, Lanciani's Ancient Rome, and archæological map of Rome now being published, Jordan's Topographie der Stadt Rom, Burn's Rome and the Campagna, Overbeck's Pompeii, Bunsen's Beschreibung der stadt Rom, Boissier's Promenades Archéologiques, Daremberg et Saglio's Dictionaire des Antiquités, Baumeister's Denkmäler des klassichen Altertums, and others of like nature.

Other graduate courses will depend entirely upon the training and acquirements of the members of the class and cannot be stated definitely.

Professor PERKINS:—

14. ROMAN SATIRE. 3 hours a week, throughout the year.
(a) Lectures on the beginnings of Satire, the history of its development, and its influence on later writers. (b) A course of reading in Lucilius, Horace, Persius, Juvenal, and Martial.

15. ROMAN LYRIC AND ELEGIAC POETRY.
3 hours a week, first half-year.
(a) A critical study of what are considered formative influences in this department of Roman poetry; (b) A course of reading covering the chief works in each of these divisions.

16. LATIN PROSE COMPOSITION. 3 hours a week, second half-year.
An advanced course, adapted to the acquirements and needs of the class.

17. *CICERO, BRUTUS; TACITUS, DIALOGUS DE ORATORIBUS.
3 hours a week, second half year.
The Brutus of Cicero, as tracing the development of Roman oratory. The Dialogus of Tacitus and the decline of eloquence among the Romans.

Mr. EMERY:—

*THE ROMAN ANNALISTS AND EARLY ROMAN HISTORY.
3 hours a week, first half-year.
This course comprises two parts: (a) The sources of our knowledge of early Roman history. The origin and growth of the traditional history. The annalists and their works and the use made of them by later historians. (b) A reconstruction of the early history of Rome.

V. MODERN LANGUAGES AND LITERATURE.

Professor WARREN:—

1. *SEVENTEENTH CENTURY FRENCH LITERATURE.
3 hours a week, first half-year, 1898-9.
The Drama: Corneille, Molière, Racine. The Prose Writers: Descartes, Pascal, La Rochefoucauld, La Bruyère, Bossuet. Society in the XVII century.

2. *FRENCH RENAISSANCE LITERATURE.
3 hours a week, second half-year, 1898-9.
Lectures. Reading based on Darmesteter and Hatzfeld's Le Seizième Siècle en France. Study of educational theories in Rabelais and Montaigne.

3. *THE ROMANTIC SCHOOL IN FRANCE.
3 hours a week, first half-year.
J. J. Rousseau (Werther, Ossian), St. Pierre, Chateaubriand, Mme. de Staël, Nodier, Lamartine, Hugo, de Musset, Dumas. Lectures.

4. *A.* *THE EIGHTEENTH CENTURY IN FRANCE.
3 hours a week, second half-year.
Voltaire, Montesquieu, Rousseau's Émile, Diderot, Marivaux, Beaumarchais, André Chénier.

B. REALISTS OF THE NINETEENTH CENTURY. Beyle, Balzac, Mérimée, Flaubert, Daudet, Zola. Lectures.

5. *SPANISH. 3 hours a week, first half-year, 1898-9.
Edgren's Spanish Grammar. Matzke's Spanish Reader. Modern Novelists. Selections from Cervantes and Lope de Vega.

6. *ELEMENTARY ITALIAN. 3 hours a week, first half-year.
Grandgent's Italian Grammar. Bowen's Italian Reader. Dante —Inferno.

7. *ADVANCED ITALIAN. 3 hours a week, second half-year.
Dante—Vita Nuova. Petrarch—Selections from Le Rime. Boccaccio—Selections from the Decameron. Ariosto—Selections from Orlando Furioso. Tasso—Selections from Gerusalemme Liberata.

Professor COLVIN:—

8. INTRODUCTION TO FRENCH PHONOLOGY.
1 hour a week, throughout the year.
Lectures on Old French Phonology and Inflections. Text-books: Schwan's Grammatik des Altfranzösischen (2nd edition.)

9. OLD FRENCH TEXTS. 2 hours a week, throughout the year.
Text-books: Bartsch-Horning's La Langue et la Littérature françaises depuis le neuvième jusqu'au quatorzième siècle, Förster and Koschwitz's Übungsbuch, Förster's Le Chevalier au Lyon, Suchier's Aucassin et Nicolette. Essays and original work required in connection with the reading.

10. PROVENÇAL. 3 hours a week throughout the year.
Lectures on the phonology and inflections of the language. Reading of Provençal literature. Texts: Bartsch's Chrestomathie, P. Meyer's Daurel and Beton. P. Meyer's Roman de Flamenca. Essays required in connection with the reading.

11. *OLD SPANISH. 3 hours a week, first half-year.
Lectures on Spanish phonetics. Reading of old Spanish texts. Text-books: Poetas Castellanos anteriores al Siglo XV, Vol. 57 of the Biblioteca de Autores Españoles. Restori's Le Gesta del Cid.

12. *OLD ITALIAN. 3 hours a week, second half-year.
Readings from early Italian texts: Ulrich's Altitalienisches Lesebuch. Special attention will be paid to Dante and the other authors of "Il Trecento." Study of phonology and inflections.

Professor DEERING:—

13. GOTHIC. 3 hours a week, first half-year.
Introduction to Germanic Philology—aims, means, methods; Gothic Grammar (Braune) Readings from Wulfila's Bible; Skeireins and other Fragments (Seminary); Germanic Phonology.

Or

14. OLD GERMAN LITERATURE. 3 hours a week, first half-year.
Critical study of the history of the older German literature from the beginnings to the Reformation. Lectures and parallel readings.

15. OLD GERMAN LIFE. 3 hours a week, second half-year, 1898-9.
A study of Old German Life, Customs, Culture, and Institutions, using for reference the texts of Schultz, Scherr, Hirth, Freytag, etc. Special reports on assigned topics.

16. OLD HIGH GERMAN. 3 hours a week, first half-year, 1898-9.
Old High German Grammar and Reader (Braune); Readings from Tatian, Notker, Williram, Otfrid (Seminary); Special study of Old High German dialects, with illustrative readings.

17. *LESSING AND THE CLASSIC GERMAN DRAMA.
3 hours a week, second half-year.
Early eighteenth century drama; Lessing's reforms and influence (lectures). Lessing's dramas, Hamburger Dramaturgie, and other illustrative parallel readings.

18. *FAUST. 3 hours a week, first half-year, 1898-9.
Lectures on the development of the Faust legend, with parallel readings from the most important Faust literature; Careful study of Goethe's Faust.

Professor HARRIS:—

19. MODERN GERMAN GRAMMAR.
3 hours a week, second half-year, 1898-9.
Study of the history of Modern Accidence and Syntax particularly. Some knowledge of Old and Middle High German is desirable, but not essential.

20. THE ROMANTIC SCHOOL. 3 hours a week, throughout the year.
History of the Romantic School and of the Romantic movement up to and including Heine.

21. *HISTORY OF GERMAN LITERATURE.
3 hours a week, throughout the year.
Outline History of German Literature from the earliest times to the present; Development of Lyric, Epic, Drama; Illustrative parallel readings.

22. *MIDDLE HIGH GERMAN. 3 hours a week, throughout the year.
The purpose of this course is the attainment of a good reading knowledge of Middle-High German through a careful study of the grammar and the reading of selections from various texts, such as the Nibelungenlied, Hartmann, Walther von der Vogelweide, etc.

Dr. MEYER:—

23. THE OLDEST GERMANIC POETRY. 3 hours a week, first half-year.
Rapid reading and comparison of Béowulf, Wídsíd, the Eddas and Volsunga Saga, the Hildebrandslied and Muspilli.

24. THE GERMANIC RELIGIOUS EPICS.
3 hours a week, second half-year.
Comparitive study of Cædmon, Otfrid, and the Heliand.

25. DIE HÖFISCHE EPIK. 3 hours a week, first half-year, 1898-9.
Reading of Wolfram's Parzival with lectures on Heinrich von Veldeke, Hartmann von Aue, Wolfram von Eschenbach, and Gottfried von Strassburg.

26. DIE VOLKSEPIK. 3 hours a week, second half-year.
Reading of the Nibelungenlied and Gudrun, with lectures on the six saga-cycles (Franconian, Burgundian, Hunnish, Ostrogothic, Lombardic, and Norman-Saxon).

27. GRILLPARZER. 3 hours a week, second half-year.
Study of Des Meeres und der Liebe Wellen, Wehe dem der Lügt (in part) Das Goldene Vliesz (in part), and Die Jüdin von Toledo with lectures on the relation of Grillparzer's art to that of Shakspere, Lope de Vega, Alfieri, Goethe and Schiller.

28. THE GERMAN SOCIAL DRAMA OF TO-DAY.
3 hours a week, second half-year.
In its relation to that of the French, Belgian, Norse, and English. Reading of Sudermann and Hauptmann, Dumas *fils* and Sardou, Mæterlinck, Bjornson and Ibsen, Grundy and Pinero.

Professor POTWIN:— (Absent for the year).

29. LITERARY SOURCES OF ENGLISH LITERATURE.
Three hours a week, first half-year, 1898-9.
Sources (1) Biblical, (2) Classical, (3) French, (4) Italian, (5) German. The study will include (a) Translations and Paraphrases, (b) Imitations in form and spirit—as Milton's Samson Agonistes, (c) Sources of Topics and Subject-matter, (d) Sources of Style.

Dr. BLOUNT:—

30. THE CRITICAL ESSAY IN ENGLISH.
3 hours a week, second half-year.
Study and discussion of the works of the chief English critics. Papers from the students.

Professor EMERSON:—

Such of the following courses will be given as seem best adapted to the needs and advancement of students who wish to specialize in English.

31. RHETORICAL THEORY. 3 hours a week, throughout the year.
An historical and critical study of rhetorical theory with reference to Greek, Roman, mediæval, and English rhetoricians. Lectures and recitations. A course for those who expect to teach English.

32. *OLD ENGLISH. 3 hours a week, first half-year.
Lectures on historical and descriptive grammar, with readings from old English prose and poetry. Special attention to the development of the language. The Sievers-Cook Grammar of Old English and Bright's Anglo-Saxon reader will be used as text-books.

33. *MIDDLE ENGLISH. 3 hours a week, second half-year.
Lectures on Middle English language and literature, with critical reading of selections from prose and poetry. Further development of the language. Text-book: Specimens of Early English.

34. TEUTONIC PHILOLOGY. 3 hours a week, first half-year.
An introductory course for students specializing in Old English. Lectures on the principles of Teutonic philology, with readings in Gothic and Old Saxon. Streitberg's Urgermanische Grammatik, Wright's Gothic Primer, selections from the Heliand.

35. CYNEWULF AND HIS SCHOOL. 3 hours a week, first half-year.
The acknowledged poems of Cynewulf will be critically read and examined. This will be followed by a careful reading of the works believed to have been written by Cynewulf, or by those influenced by him.

36. THE MIDDLE ENGLISH POETICAL ROMANCE.
3 hours a week, second half-year.
The sources of the poetical romance of Middle English times and its development on English soil. Lectures and readings.

37. CHAUCER AND HIS WORKS. 3 hours a week, second half-year.
Study of the development of Chaucer's genius, as exhibited in his poetry, together with an examination of his language, the form and structure of his verse, and the sources of his poetic material.

38. POPE TO TENNYSON. 3 hours a week, throughout the year.
A study of the revolt against classicism in the eighteenth century, and the development of romanticism as exemplified in the poets under review.

39. PHONETICS. 1 hour a week, throughout the year.
Lectures and recitations on the fundamental relations of speech sounds, and on phonetic analysis. Special study of the phonetics of English.

Associate Professor HULME:—

40. BEOWULF AND OLD ENGLISH EPIC POETRY.
3 hours a week, first half-year.
Interpretation of Beowulf and study of the various theories relative to the origin and development of the poem. Study of other Old English epic poems.

41. *THE DRAMA BEFORE SHAKESPEARE.
3 hours a week, first half-year, 1898–9.
Lectures on the rise of Mystery, Miracle and Moral Plays in England and on the Continent. Interludes, early tragedy and comedy. Rise of the English theatre. Shakespeare's predecessors.

42. *SHAKESPEARE AND HIS CONTEMPORARIES IN THE ENGLISH DRAMA. 3 hours a week, second half-year.
Lectures on Shakespeare's life, art and works in relation to his contemporaries. Several of Shakespeare's plays studied with class. The remaining plays required as parallel reading.

43. LATE MIDDLE ENGLISH AND EARLY MODERN ENGLISH.
3 hours a week, second half-year.
Skeat's Specimen's, Part III. Lectures on English metre with special reference to development of Blank Verse.

VI. NATURAL AND PHYSICAL SCIENCES.

Professor CUSHING:—

1. DESCRIPTIVE MINERALOGY AND CRYSTALLOGRAPHY.
3 exercises (5 hours) a week, second half-year.
The course will consist of the study of the relationships of crystals, by means of crystals and crystal models, the measurement of crystals and calculation of their elements, and the investigation of the physical properties of minerals.
This course consists entirely of laboratory work.

2. *DETERMINATIVE MINERALOGY.
3 exercises (3 hours each) a week, first half-year.

3. PETROGRAPHY.
(Number of hours per week determined by consultation.)
The preparations and study of rock sections, and the study of the crystalline rocks and their relationships.

4. *STRATIGRAPHICAL AND DYNAMICAL GEOLOGY.
Time as in preceding course.
This course will be supplemented, as far as possible, by field work in the vicinity.

Professor HERRICK:—

5. *ANIMAL MORPHOLOGY—A
1 recitation, 2 laboratory exercises of 2 hours each, first half-year.
The work in this course will include the study of the structure, the development and relationship of the principal types of invertebrate animals. Instruction will be given by means of lectures and laboratory work. Laboratory work will embrace the study of all or part of the following organisms: Sycon and

Leucon Sponges; Hydra, Tubularian and Campanularian Hydroids; Alcyonarian Coral, Actinian, Sea Urchin, Starfish, Holothurian, Planarian, Tapeworm, Earthworm, Nereis, Cladocera, Cyclops, Parasitic Copepod, Barnacle, Isopod, Stomatopod, Macrouran and Brachyouran, Limulus, Scorpio, Blatta, Anodon, Fulgur, Loligo (Squid), Salpa, Amphioxus, Teleost.

6 ANIMAL MORPHOLOGY—B. (With lectures and research work in the laboratory).

3 exercises (5 hours) a week, first half-year.

This course will consist of lectures upon certain groups of animals, with the assignment of special problems for investigation. Open only to graduate students with adequate preparation.

7. *VERTEBRATE EMBRYOLOGY.

3 exercises (5 hours) a week, second half-year.

In this course a detailed study of the development of some vertebrate, such as the fowl, amphibian or fish, will be undertaken, and the student will learn how to prepare embryological material. The principal text-books followed will be Elements of Embryology by Foster and Balfour, Hertwig and Mark's Embryology of Man and Mammals, Marshall's Vertebrate Embryology.

Or

8. *BOTANY OR VEGETABLE MORPHOLOGY.

3 exercises (5 hours) a week, second half-year.

This course is intended to serve as an introduction to the study of Botany, and, beginning with the structure of the cell, it will consist of the comparative study of the lower and higher plants, considered primarily with reference to their anatomy and general morphological relations. Hours same as in course 7.

9. EXPERIMENTAL BIOLOGY. 1 hour each week, first half-year.

A course of twenty lectures on the mechanics of development and the functions of living matter.

10. *MAMMALIAN ANATOMY.

3 exercises (5 hours) a week, first half-year.

This course begins with a general consideration of the structure, classification and development of Vertebrates. The mammalian type is studied upon one of the higher animals, as the rabbit. The comparative study of the hard parts and the mammalian skeleton is followed by the dissection of the more important organs. Each student will be required to make notes and drawings of some special dissection assigned to him during the course.

11. *ELEMENTS OF VERTEBRATE HISTOLOGY.

3 exercises (5 hours) a week, first half-year.

This course consists in the preparation and microscopical examination of the tissues of the body of man and higher vertebrates. Special attention will be given to technical methods in microscopical anatomy, to preparing, staining and sectioning histological material. No student is admitted to this course who has not had preliminary training in general Biology. The principal books of reference are: Lee's Microtomist's Vade Mecum, Quain's Anatomy and Apathy's Die Mikrotechnik der thierischen Morphologie.

The Laboratory Fees for the different courses are: Courses 10, 11, 7, $5.00; Courses 5, 6, 8, $4.00.

Professor WHITMAN:—

12. PHYSICAL OPTICS.

2 hours a week, and one laboratory exercise, first half-year.

Glazebrook's Physical Optics, with lectures and laboratory work.

13. *THEORY OF HEAT. 3 hours a week, second half year.

A course based mainly on Maxwell's Theory of Heat, with lectures and references.

14. *THEORY AND PRACTICE OF ELECTRICAL MEASUREMENTS.

Two laboratory exercises and one conference a week, throughout the year.

While mainly a laboratory course, this includes a general review of Electrical Theory. The text used will depend somewhat on the character of the class.

A knowledge of the elements of the Calculus is necessary for courses 13 and 14.

VII. MATHEMATICS.

Professor SMITH:—

1. *DIFFERENTIAL AND INTEGRAL CALCULUS.
3 hours a week, throughout the year.
Differentiation and Integration of Functions of a single Variable; Applications to Geometry and Mechanics; Successive Differentiation and Integration, with applications; Indeterminate Forms; Development of Functions in series; Maxima and Minima, Functions of two or more Variables; Tangents, Normals, and Asymptotes; Curvature, Singular Points, Evolutes, Rectification; Quadrature. Emphasis will be put upon solving examples.

2. *ANALYTIC GEOMETRY (extended course).
3 hours a week, first half-year.
Plane Analytic Geometry: Review of the Parabola and the Ellipse; Hyperbola, General Equation of the Second degree; Higher Plane Curves. Geometry of three Dimensions: The Point, the Straight Line, the Plane, Surfaces of Revolution.

3. *THE THEORY OF EQUATIONS. 3 hours a week, second half-year.
General properties of Equations. Relations between Roots, and Coefficients of Equations; Transformation of Equations; Algebraic Solution of the Cubic and Biquadratic; Limits of the Roots of Equations; Solution of Numerical Equations.

Professor PALMIÉ:—

4. HIGHER PLANE CURVES. 3 hours a week, first half-year.
General Properties of Algebraic Curves; Multiple Points and Tangents; Poles and Polars; Envelopes, Reciprocal Curves, Tact-invariant of two curves; Caustics, Parallel Curves, and Negative Pedals; Metrical Properties. Salmon's Higher Plane Curves.

5. THEORY OF FUNCTIONS. 3 hours a week, second half-year.
General Theory of Functions.

6. DIFFERENTIAL EQUATIONS. 3 hours a week, first term.
Equations of the First Order; Linear Equations with constant Coefficients; Miscellaneous Methods; Legendre's Equation; Bessel's Equation; Forsyth's Differential Equations.

7. *PROJECTIVE GEOMETRY. 3 hours a week, second half-year.
Lectures on Parallel Projections; Perspective; Homology; Vanishing Points and Lines; Projective Figures; Cross Ratios; Harmonic Ratios; Projective Ranges and Pencils; Involution; General Properties of Conics; Conic Ranges and Pencils; Conic Involution; Conjugate Points and Lines; Reciprocal Figures; Centers and Diameters; Foci and Directrices.

8. *QUATERNIONS. 3 hours a week, second half-year.
Vector Addition, Subtraction, Multiplication, and Division; Straight Line and Plane; Circle and Sphere; Ellipse, Parabola and Hyperbola; Central Surfaces of the Second Order; Formulæ and their Applications; Vector Equations of the First Degree. Kelland and Tait's Introduction to Quaternions.

9. THEORY OF SUBSTITUTIONS. 3 hours a week, first half-year.
General Theory of Substitutions with applications to the solution of cubic and biquadratic equations.

APPENDIX.

COMMENCEMENT, 1897.

The degree of MASTER OF ARTS was conferred upon

ISABEL GRAVES, Ph. B., Wesleyan University, 1891.

ALFRED MONROE KENYON. A. B., Hiram College, 1894.

GRADUATES.

1894.

ELLEN SCOTT DAVISON, A. M.
Instructor in History, St. Margaret's School, Waterbury, Conn.

CLAY HERRICK, A. M.
Principal Western Reserve Academy, Hudson, O.

EMILY CHRISTIANA MONCK, A. M.
Teacher of Greek and English, Central High School, Cleveland.

FRED CLAYTON WAITE, A. M.
Harvard University, Cambridge, Mass.

1895.

CLARENCE POWERS BILL, A. M.
Harvard University, Cambridge, Mass.

GEORGE BRINTON EISENHARD, A. M.
Instructor in Science, Akron High School, Akron, O.

CHARLES THOMAS HICKOK, Ph. D.
Principal Western Reserve Academy, Hudson, O.

VICTORIA CHARLOTTE LYNCH, A. M.
Teacher in Central High School, Cleveland, O.

ARTHUR HULL MABLEY, A. M.
Assistant in Latin, Adelbert College, Cleveland, O.

MARY CHILTON NOYES, Ph. D.
Professor of Physics, Mt. Holyoke College, South Hadley, Mass.

HARRY WILMOT WOODWARD, A. M.
Instructor in Physics, Adelbert College, Cleveland, O.

1896.

GRACE PUTNAM WENHAM, A. M.
Instructor in English, Miss Mittleberger's School, Cleveland, O.

1897.

ISABEL GRAVES, A. M.
Fellow in English, University of Pennsylvania, Philadelphia, Pa.

ALFRED MONROE KENYON, A. M.
Harvard University, Cambridge, Mass.

The Franklin T. Backus
Law School.

CALENDAR.

1897.		
21-22 Sept.	Tuesday-Wednesday	Examinations for Admission.
23 Sept.	Thursday	First Term begins.
25 Nov.	Thursday	Thanksgiving Day.
23 Dec.	Thursday	Winter Recess begins.
1898.		
3 Jan.	Monday	Winter Recess ends.
28 Jan.	Friday	Examinations begin.
5 Feb.	Saturday	First Term ends.
7 Feb.	Monday	Second Term begins.
7-13 April	Thursday-Wednesday	Easter Recess.
10 June	Friday	General Examinations begin.
19 June	Sunday	Baccalaureate Sermon.
20 June	Monday	Meeting of Alumni.
22 June	Wednesday	COMMENCEMENT.
23-24 June	Thursday-Friday	Examinations for Admission.

SUMMER VACATION OF THIRTEEN WEEKS.

20-21 Sept.	Tuesday-Wednesday	Examinations for Admission.
22 Sept.	Thursday	First Term begins.
24 Nov.	Thursday	Thanksgiving Day.
22 Dec.	Thursday	Winter Recess begins.

FACULTY.

CHARLES FRANKLIN THWING, D. D., LL. D., *President.*	55 Bellflower Av.
HON. STEVENSON BURKE, *Professor of Corporation Law.*	1106 Euclid Av.
HON. CHARLES ELLIOTT PENNEWELL, *Professor of the Law of Real Property.*	1154 Willson Av.
EVAN HENRY HOPKINS, A. B., LL. B., *Dean and Professor of the Law of Contracts and Equity Jurisdiction.*	84 Miles Av.
HENRY CLAY WHITE, A. M., LL. B., *Professor of the Law of Wills and Administration of Estates.*	344 Harkness Av.
HOMER HOSEA JOHNSON, A. M., LL. B., *Professor of the Law of Evidence and Constitutional Law.*	620 Prospect St.
ABRAHAM T. BREWER, LL. B., *Professor of the Law of Insurance and Corporations.*	149 Kensington.
ALEXANDER HADDEN, A. M., *Professor of the Law of Crimes.*	1670 Lexington Av.
ARTHUR ADELBERT STEARNS, A. M., *Professor of the Law of Suretyship and Mortgage.*	87 Oakdale.
ROGER MILLER LEE, LL. B., *Professor of the Law of Shipping and Admiralty, and Common Carriers.*	115 Ingleside Av.
FREDERICK AUGUSTUS HENRY, A. M., LL. B., *Professor of the Law of Personal Property and Torts.*	154 Kensington St.

JAMES LAWRENCE, A. B.,
Professor of the Law of Public and Private Corporations. 709 Genesee Av.

ALFRED G. CARPENTER, A. B., LL. B.,
Professor of the Law of Bills and Notes. 125 Streator Av.

EDWIN L. THURSTON, PH. B.,
Professor of Patent Law. Lake Av., Lakewood.

PAUL HOWLAND, A. B., LL. B.,
Professor of the Law of Pleading and Practice, and Partnership. 11 Granger St.

HENRY BARDWELL CHAPMAN, A. B., LL. B.,
Professor of the Law of Contracts and Agency. E. Cleveland.

FRANK RUFUS HERRICK, A. B.,
Professor of the Law of Torts. 449 Russell Av.

HON. EDWIN T. HAMILTON,
Lecturer on the Law of Res Adjudicata and Collateral Attack. 262 Bolton Av.

FRANK STUART MCGOWAN, A. B.,
Lecturer on Insurance Law. 841 Case Av.

ERNEST ALBERT FRAZEL,
Lecturer on Legal Literature and Presiding Officer of Moot Courts. 117 Murray Hill Av.

FRANCES L. TROWBRIDGE, 84 Miles Av.
Librarian.

STUDENTS.

THIRD YEAR CLASS.

CARLOS DELOS AINGER	*Andover*	788 Fairmount St.
CONSTANT JOSEPH BENKOSKI (St. Ignatius, 1892-95).	*Cleveland*	92 Fullerton St.
CLARENCE ROBERT BISSELL (Ph. B., Hiram, 1894).	*Aurora*	Hiram House.
JOHN L. CANNON	*Alliance*	135 Chestnut St.
ABRAHAM CRAMER (Adelbert, 1894-95).	*Cleveland*	76 Branch Av.
HARRY JAMES CRAWFORD (A. B., Ohio Wesleyan, 1896).	*Richmond*	29 Afton Place.
GEORGE DAVID INGRAM	*Wellsville*	52 Cornell St.
VICTOR CHARLES LYNCH (Ph. B., Adelbert, 1895).	*Cleveland*	302 Sibley St.
ALBERT ROBERT MANNING (Adelbert, 1893-94).	*Cleveland*	17 Vestry St.
ALEXANDER HAMILTON MARTIN (B. L., Adelbert, 1895).	*Geneva*	2261½ Euclid Av.
WILLIAM ORIN MATHEWS (Michigan Univ., 1895).	*Rockport*	220 Princeton.
TOM F. QUIGLEY	*Cleveland*	40 Hawthorne Av.
WILLIAM JOHN SHAW	*Green Spring*	Adelbert Hall.
CHARLES LINCOLN STOCKER (A. B., Oberlin, 1894).	*Gnadenhutten*	117 Adelbert Av.
AARON BURT STRIMPLE (Baldwin Univ., 1890-91).	*Cleveland*	263 Harkness Av.
WAYNE BIDWELL WHEELER (A. B., Oberlin, 1894).	*Sharon, Pa.*	117 Adelbert Av.

SECOND YEAR CLASS.

BENJAMIN PATTERSON BOLE (Ph. B., Adelbert, 1896).	*Cleveland*	Ansel Av. and Superior St.
WILLIAM MORRIS BRESLER	*Cleveland*	1299 Willson Av.
FRED EDWARD BRUML	*Cleveland*	283 Central Av.
WILLIAM ALLEN CAREY (St. Ignatius, 1891).	*Cleveland*	18 Brookfield St.
WILLIAM H. CLEMINSHAW (A. B., Williams, 1890).	*Cleveland*	460 Russell Av.
HENRY OTIS COZAD (Adelbert, 1895-96).	*Cleveland*	41 Cornell St.
JAMES ALVAH CURTIS	*Warrensville*	200 Oakdale St.
JACOB DE KAISER	*Pittsburg, Pa.*	1062 Central Av.
CHARLES JOHN EBY	*Rocky River*	Rocky River.
HARRY WATSON EWING (Adelbert, 1893-95).	*Cleveland*	1061 Crawford Road.
CARL DAVID FRIEBOLIN	*Cleveland*	15 Lockyear Av.
JAMES MCCREARY GEE (Allegheny College, 1893-95).	*N. Kingsville*	51 Anndale St.
BOYD FLETCHER GURLEY (Ohio Wesleyan, 1894-97).	*Bogart*	51 Anndale St.
WILLIAM HENRY HILL	*Hartville*	314 Cedar Av.
WILLIAM ROWLAND HOPKINS (A. B., Adelbert, 1896).	*Cleveland*	47 Jones Av.
ARTHUR NELSON KALEY	*Massillon*	1862 Euclid Av.
GEORGE HENRY KANE	*Cleveland*	1862 Euclid Av.
LADIMER EDWARD KREJCI (Adelbert, 1895-96).	*Cleveland*	1306 Case Av.
HORACE NEWTON LILLEY	*Sidney*	791 Doan St.
HERBERT MATHEWS	*Rockport*	Rockport.
ALBERT MENDELSON	*Cleveland*	1106 Case Av.

LOUIS AUGUSTUS MOSES (Adelbert, 1895-96).	*Cleveland*	815 Fairmount St.
DANIEL WILBUR MYERS (A. B., Univ. of Minn., 1896).	*Rocky River*	51 Anndale St.
ALBERT EDWARD POWELL	*Cleveland*	79 Jones Av.
PETER DALY QUIGLEY	*Cleveland*	40 Hawthorne Av.
JAMES ARTHUR SANFORD	*Cleveland*	34 Woodland Ct.
HERBERT RUFUS SPROUL	*Cleveland*	689 Pearl St.
WILLIAM JUDD STARKWEATHER, JR. (A. B., Yale, 1896).	*Rocky River*	Rocky River.
DORR EUGENE WARNER (A. B., Princeton Univ., 1896).	*Unionville*	51 Anndale St.
DUNCAN BREWSTER WOLCOTT (A. B., Adelbert, 1896).	*Kent*	University School.

FIRST YEAR CLASS.

CHARLES JAMES ANDERSON	*Shelby*	102 Crawford Rd.
WILLIAM MARTIN BARRETT	*Glenville*	Glenville.
JOHN HINCKLEY BEHR (A. B., Oberlin, 1897).	*Oberlin*	125 Adelbert Av.
ABRAM EDWARD BERNSTEEN (Adelbert, 1894-97).	*Cleveland*	297 Perry St.
JAMES ROSS CLARK	*Bedford*	416 Sibley St.
HENRY WOODWORTH CLUM (Kenyon, 1893.)	*Washington, D. C.*	125 Adelbert Av.
FRANK MACMILLAN COBB (A. B., Yale, 1897).	*Cleveland*	2509 Euclid Av.
JAMES SLATER DAVIDSON (Columbia, 1886-89).	*Washington, D. C.*	791 Doan St.
CLAYTON KING FAUVER (Ph. B., Oberlin, 1897).	*Oberlin*	University School.
CHARLES WALTER FISK (A. B., Adelbert, 1897).	*Cleveland*	1340 Zoeter Av.
JOHN MILAN GARFIELD	*San Francisco, Cal.*	Euclid Heights.
WILLIAM A. GIBSON	*Cleveland*	1174 Willson Av.
JOHN VINCENT GINLEY	*Cleveland*	24 Ramsey St.
CLIFFORD B. HASKINS	*Cleveland*	45 Streator Av.
SAMUEL HEIMLICH	*Cleveland*	704 Detroit St.
JOHN JACOB HUEBNER	*Johnstown, Pa.*	94 Sayles St.
DAVID GAUL JAEGER (A. B., Adelbert, 1897).	*Cleveland*	113 Brookfield St.
VERNON O. JOHNSTON (A. B., Oberlin, 1897).	*Oberlin*	125 Adelbert Av.
JOHN CHARLES JONES	*Cleveland*	101 Oakdale St.
MORRIS KELLER	*Shelby*	117 Adelbert Av.

GEORGE HARRINGTON KELLY (A. B., Princeton, 1897).	*E. Liverpool*	791 Doan St.
GLENN LEWIS LLOYD	*Neillsville, Wis.*	688 Wade Park Av.
CORNELIUS MALONEY (Buchtel, 1896-97).	*Akron*	125 Adelbert Av.
MAX EMILE MEISEL (B. L., Adelbert, 1897).	*Cleveland*	221 Hamilton St.
HORACE NEFF	*Cleveland*	3121 Euclid Av.
OTTO HARRY NEUBAUER	*Orange*	21 Watkins Av.
ROBERT BURTON NEWCOMB (Ph. B., Baldwin Univ., 1897).	*Berea*	125 Adelbert Av.
JAMES O. ORR	*Wellsville*	897 Fairmount St.
REUBEN OVERHOLT	*Wadsworth*	345 Cedar Av.
MILO ORLANDO PECK (Oberlin, 1891-93).	*Richmond Centre*	117 Murray Hill Av.
JOHN PINDRAS	*Cleveland*	336 Fleet St.
WILLIAM CHARLES POLLNER	*Cleveland*	26 Guernsey St.
HARRY BARBER SAWYER (Kenyon, 1893-97).	*Cleveland*	54 Streator Av.
STEPHEN DOUGLAS SANOR (B. S., Mt. Union, 1889; M. S., 1892).	*Cleveland*	150 Hawthorn Av.
PAUL OLIVER SEMON	*Cleveland*	147 Bolton Av.
WILLIAM B. STEWART (Ohio Wesleyan, 1894-96; Adelbert, 1897.)	*Cleveland*	1263 Broadway.
EDWIN LOUIS STRIEBINGER	*Cleveland*	824 Woodland Av.
GEORGE EVERETT STONE (Case School of Applied Science, 1894-97).	*Cleveland*	248 Prospect St.
RALPH ACKLEY TINGLE	*Cleveland*	2132 Euclid Av.
ROY FOSTER VAN VOORHIS	*Van Wert*	897 Fairmount St.
ASHLEY FATHERLEY WARD (Kentucky State College, 1896-97).	*Cynthiana, Ky.*	1387 Cedar Av.
IRVING FRANCIS WEIL	*Cleveland*	998 Case Av.

REQUIREMENTS FOR ADMISSION.

Each person wishing to enter the school, whether as candidate for a degree or not, must present a certificate of good moral character.

Each person wishing to be admitted as a candidate for a degree must be a graduate of a college or of a high school of approved standing, or must pass an examination upon *three* of the following subjects: (1) English History (as much as is contained in Green's Short History of the English People); (2) Lodge's Short History of the American Colonies, Fiske's American Revolution, Fiske's Critical Period of American History and (a) Johnson's American Politics, Lodge's Washington, Sumner's Hamilton, Sumner's Jackson, Schurz's Clay, Von Holst's Calhoun, or (b) Schouler's History of the United States (5 vols.); (3) The Constitution and Government of the United States (as much as is contained in Fiske's Civil Government); (4) The translation at sight of average passages from Cæsar's Commentaries and Cicero's Orations; (5) Logic (as much as is contained in Jevons' Elementary Lessons); (6) Algebra (through quadratic equations); (7) Plane Geometry; (8) Elementary Physics; (9) Chemistry (including laboratory work in qualitative analysis).

The examinations upon the subjects enumerated will not be technical and minute, but they will be intended to ascertain whether the candidate has pursued the subjects intelligently and whether he is capable of profiting by a course of thorough instruction in law. The examinations are written, and will be held at the beginning of the school year.

Candidates for the degree of LL. B., entering the school in September, 1899, and thereafter, who are not College graduates or matriculates, or graduates of High Schools of approved

standing, must pass satisfactory examinations in the following subjects:

ENGLISH: English Composition. MATHEMATICS: Arithmetic, including the Metric System; Algebra (Loomis', Wells' or Wentworth's College) to the Binomial Theorem; Geometry (Wentworth's or Wells') complete. LATIN: Grammar; Cæsar—three books of the Gallic, or two books of the Civil War; Cicero—six orations, including De Imperio Gn. Pompeii; Vergil—the Bucolics, two books of the Georgics, and five books of the Æniad; or, the Bucolics and six books of the Æniad; translation at sight from Ovid and simple prose; Prose Composition—rendering simple English sentences into Latin; History of Rome; Ancient Geography. GREEK: Grammar; Xenophon—four books of the Anabasis; Homer—three books of the Iliad, with Prosody; Translation at sight; Prose Composition; History of Greece; Ancient Geography. *In place of Greek:* German Grammar; Translation at sight; Prose Composition; Riehl—Der Fluch der Schönheit; Freytag—Aus dem Staat Friedrichs des Grossen; Heine—Die Harzreise; Gœthe—First three books of Dichtung und Wahrheit; Lessing—Minna von Barnhelm; Schiller—Wilhelm Tell and Das Lied von der Glocke; thirty pages of lyrics or ballads; *or* French Grammar; Translation at sight; Prose Composition; Halévy—L'Abbé Constantin; Daudet's Contes; Sandeau—Mlle de La Seiglière; Hugo—Hernani; Mollière—Bourgeois Gentilhomme; Racine—Athalie; Corneille—Cid; Balzac's Eugénie Grandet. *Or in place of Greek:* Chemistry, Physics, English History.

It is especially desirable that students contemplating the study of law should secure the largest degree of intellectual training and culture possible to them before entering the law school.

Persons not candidates for a degree will be admitted to the school as special students at any time without examination and

may pursue such studies as they may elect, under the advice of the Faculty.

COURSE OF INSTRUCTION.

First Year.

Contracts. Lectures and Langdell's Cases. Three hours each week. Professor Hopkins.

Common Law Pleading. Lectures and Ames' Cases on Pleading. Two hours each week during last half-year. Professor Howland.

Criminal Law. Lectures and Clark's Criminal Law. Two hours each week. Professor Hadden.

Real Property. Lectures and Tiedeman on Real Property. Two hours each week. Professor Pennewell.

Torts. Ames' and Smith's Cases and Lectures. Two hours each week during first half-year and four hours each week during last half-year. Professors Herrick and Henry.

Legal Literature. Coke and Blackstone and Lectures. Five hours each week during first half-year and two hours each week during last half-year. Mr. Feazel.

History of Common Law Procedure. Lectures and selected readings from Pollock and Maitland's History of English Law, Bigelow's History of Procedure, Maitland's Domesday Book and Beyond, Inderwicks' The King's Peace, Stubbs' Constitutional History of England, Coke's Institutes, Blackstone's Commentaries, and Stephen on Pleading. Five hours each week during the first half of the first term. Professor Hopkins.

Second Year.

Agency. Lectures and Wambaugh's Cases. Two hours each week. Professor Chapman.

Bills and Notes. Lectures and Norton's Bills and Notes. Two hours each week. Professor Carpenter.

Equity Jurisdiction. Accident, Mistake and Fraud. Cases and Lectures. Two hours each week during last half-year. Professor Hopkins.

Evidence. Lectures and Thayer's Cases. Two hours each week. Professor Johnson.

Sales. Lectures and Williston's Cases on Sales. One hour each week. Professor Henry.

Wills and Administration of Estates. Lectures and Schouler on Wills. Two hours each week. Professor White.

Trusts. Lectures and Ames' Cases. Two hours each week. Professor Hopkins.

Contracts. Lectures and Williston's Cases on Contracts and Keener's Cases on Quasi Contracts. Two hours each week. Professor Chapman.

THIRD YEAR.

Constitutional Law. Lectures and Thayer's Cases. Two hours each week. Professor Johnson.

Equity Jurisdiction. Lectures and Selected Cases. Two hours each week. Professor Hopkins.

Suretyship and Mortgages. Lectures and Selected Cases. Two hours each week. Professor Stearns.

Partnerships. Ames' Cases and Lectures. Two hours each week during first half-year. Professor Howland.

Corporations. Lectures and Elliott's Cases. Two hours each week. Professor Lawrence.

Shipping and Admiralty and Common Carriers. Lectures and Selected Cases. Two hours each week. Professor Lee.

Insurance. Lectures and Richards on Insurance. One hour each week last half-year. Professor Brewer and Mr. McGowan.

Patents and Federal Jurisdiction and Procedure. Lectures. One hour each week. Professor Thurston.

Pleading and Practice in Ohio, including the Drawing of Deeds, Mortgages, Wills, etc., as well as Pleadings. Two hours each week. Professor Howland.

Reviews of subjects embraced in examinations for admission to the Ohio Bar. Three hours each week during last half-year. Mr. Feazel.

Each student is expected to be in the class-room during all the hours of the first year and at least ten hours a week during each of the last two years, and the purpose is that the students shall devote their entire time to the work of the school.

MOOT COURTS.

Moot Courts are held under the supervision of the Faculty. Students are required to act as counsel, and counsel are required to draw up pleadings and submit written briefs before the case is heard. After the case has been heard and submitted, the presiding judge is required to hand down a written opinion.

UNIVERSITY ADVANTAGES.

The classes of the other departments of the University are open to law students. By attendance upon such classes, by use of the University Library and of the other accessible libraries, and by all other available means, the student is urged to add to his knowledge of technical law a knowledge of the following subjects:—Roman Law, Analytical Jurisprudence, History of Institutions, Law French and Law Latin, English Constitutional History, Constitutional History of the United States, and International Law. In selecting a course of private reading, students are encouraged to consult the professors.

LIBRARIES.

The Law School has at present a library containing a very full collection of the leading text books, nearly all the more important English reports, the reports of the United States supreme and circuit courts and several of the leading state reports. Additions are constantly made to the library both by purchase and gift. During the past year the school has been the recipient of large gifts of books from the late W. W. Andrews, Esq. and from S. P. Baldwin, Esq., a member of the first graduating class of the school. Students also have free access to the Adelbert College Library, Cleveland Public Library, and Case Library, and have access also to the Cleve-

land Law Library, which contains a complete collection of all the English and American reports, as well as a large number of text books.

EXAMINATIONS.

Candidates for the degree of LL. B. must attend the school at least two years, and must pass satisfactory examinations in all the subjects of the first year and in such courses of the second and third years as shall aggregate ten hours a week each for each year. Provided that, if a student is absent a year he shall take the examinations in the subjects of that year at the school with the class. At the beginning of the school year an examination on the subjects of the first year will be held for the benefit of such students as may desire to enter the second year class.

LOCATION OF THE SCHOOL.

The school is located in its beautiful new building on Adelbert Avenue. There are three recitation rooms and a library and reading room each twenty-five by forty feet, well lighted and ventilated. In the basement are lockers where each student is provided a place for keeping his coat, hat and books. There are also rooms where students may meet in social intercourse. Everything that effort and money can secure for the students has been provided.

SCHOLARSHIPS.

The following scholarships have been established by the Board of Trustees. The two students of the First Year class who shall pass the highest examinations in the work of the first year will receive their tuition for the second year free of charge. The two students of the Second Year class passing the highest examination in work of the second year will receive their tuition for the third year free of charge.

EXPENSES.

The fee for tuition is one hundred dollars a year. One-half of this fee is payable at the beginning of the university year, and the other half is payable at the beginning of the second half-year. On failure to pay tuition within one month after payable, an extra charge of five dollars will be made. For any part of either half-year the tuition fee is fifty dollars. No fees are charged for examination. When paid in advance the fee for the three years will be two hundred and fifty dollars.

Rooms can be secured in the vicinity of the school for from $25 to $75 a year. At the college refectory excellent board is furnished students at actual cost. A boarding club has also been organized by some of the students in the law school, where good board has been furnished at $2 a week. Fuel and lights cost from $10 to $25 a year. Text books used in the classes cost from $17 to $30 a year, but a student wishing to economize can usually sell his books at the end of the year at a reduction of 25 per cent.

For further information address the Dean,

E. H. HOPKINS,
831 The Cuyahoga, Cleveland, O.

The Medical College.

CALENDAR.

1898—January 3d	. . . . .	*Holiday recess ended.*
May 12th	. . . . .	*Examinations begin.*
May 25th	. . . . .	*Commencement exercises.*
May 26th	. . . . .	*Examinations for admission.*
October 3d	. . . . .	*Examinations for admission.*
October 5th	. . . . .	*Session opens.*
December 23d	. . . . .	*Holiday recess begins.*
1899—January 4th	. . . . .	*Exercises resumed.*
June 6th	. . . . .	*Examinations begin.*
June 16th	. . . . .	*Commencement exercises.*
June 17th	. , ...	*Examinations for admission.*
Legal Holidays	. . . . .	*Exercises omitted.*

THE MEDICAL COLLEGE OF WESTERN RESERVE UNIVERSITY, CLEVELAND.

The course of study in this college, for the degree of Doctor of Medicine, is of four years' duration. The school year or session continues eight months. Theoretical and applied branches of study are arranged with reference to their bearing upon and preparation for each other, and the effect of the whole course. Instruction is given by lectures, recitations, laboratory work, clinical demonstrations.

The year begins on Wednesday, October 5th, 1898 and ends on Thursday, June 16th, 1899. There is a holiday recess beginning December 23d and ending January 4th. Exercises are omitted on all legal holidays.

In the subjects of Anatomy, Chemistry, Physiology, Histology, Bacteriology, Pathological Anatomy, and Pharmacology, laboratory work accompanies didactic lectures and is required of every student.

This college was established in 1843, and has held annual sessions from that time. The buildings are modern in plan, construction and equipment. An endowment of the chairs of Anatomy, Physiology, Chemistry and Pathology, permits the employment of teachers who devote all of their time to teaching in this college.

NOTE.—*Beginning with the academic year of 1901-2, the requirements for admission will consist of such knowledge and training as are embodied in the first three years of a college course.*

THE MEDICAL COLLEGE.

FACULTY.

CHARLES F. THWING, D. D., LL. D., *President.*

HENRY J. HERRICK, A. M., M. D., *Professor Emeritus of Hygiene and State Medicine.*

JACOB LAISY, A. M., M. D., *Professor Emeritus of Anatomy.*

JOHN E. DARBY, A. M., M. D., *Professor of Materia Medica and Therapeutics.*

HUNTER H. POWELL, A. M., M. D., Dean, *Professor of Obstetrics and Pediatrics.*

JOHN H. LOWMAN, A. M., M. D., *Professor of Medicine and Clinical Medicine.*

JOHN P. SAWYER, A. M., M. D., *Professor of Medicine and Clinical Medicine.*

PERRY L. HOBBS, PH. D. (Berlin), *Professor of Chemistry.*

WILLIAM T. CORLETT, M. D., L. R. C. P. (Lond.), *Professor of Dermatology, Syphilology and Genito-Urinary Diseases.*

HENRY S. UPSON, A. B., M. D,, *Professor of Neurology.*

CONWAY W. NOBLE, *Professor of Medical Jurisprudence.*

GEORGE C. ASHMUN, M. D., Registrar and Bursar, *Professor of Hygiene and Preventive Medicine.*

DUDLEY P. ALLEN, A. M., M. D., *Professor of the Theory and Practice of Surgery and Clinical Surgery.*

BENJAMIN L. MILLIKIN, A. M., M. D., *Professor of Ophthalmology.*

CARL A. HAMANN, M. D., *Professor of Anatomy.*

FRANK E. BUNTS, M. D., *Professor of the Principles of Surgery and Clinical Surgery.*

HUNTER ROBB, A. M., M. D., *Professor of Gynecology.*

G. N. STEWART, M. A. D. Sc., M. D. (Edin.), D. P. H. (Camb.), *Professor of Physiology and Histology.*

WILLIAM T. HOWARD, JR., A. B., M. D., *Professor of Pathology, Pathological Anatomy and Bacteriology.*

WILLIAM H. NEVISON, A. B., M. D., *Lecturer on Minor Surgery and Bandaging.*

EDWARD F. CUSHING, M. D., PH. D., *Prof. of the Diseases of Children.*

WILLIAM H. HUMISTON, M. D., *Associate Professor of Gynecology.*

CHARLES F. HOOVER, A. M., M. D., *Professor of Physical Diagnosis.*

JOHN M. INGERSOLL, A. M., M. D., *Lecturer on Otology, Rhinology and Laryngology.*

WILLIAM R. LINCOLN, M. D., *Lecturer on Otology, Rhinology and Laryngology.*

LABORATORY ASSISTANTS.

TORALD SOLLMANN, M. D., *Demonstrator of Physiology and Histology.*

DANIEL W. GANS, M. D., *Demonstrator of Pathology and Bacteriology.*

THAD D. MCFARLAND, PH. G., *Demonstrator of Chemistry.*

CLINICAL ASSISTANTS.

FRANK S. CLARK, A. M., M. D., *Assistant in Obstetrics and Pediatrics.*
Lakeside Hospital Dispensary

WILLIAM E. BRUNER, A. M., M. D., *Assistant in Ophthalmology.*
Lakeside Hospital Dispensary.

OSCAR T. THOMAS, A. M., M. D., *Assistant in Gynecology.*
Charity Hospital Dispensary.

HAROLD T. CLAPP, A. M., M. D., *Assistant in Gynecology.*
Charity Hospital Dispensary.

WALTER R. LINCOLN, A. B., M. D., *Assistant in Gynecology.*
Lakeside Hospital Dispensary.

HARRISON G. WAGNER, M. D., *Assistant in Medicine.*
Lakeside Hospital Dispensary

NORMAN O. PAULIN, M. D., *Asst. in Medical Clinic at Charity Hospital.*

D. K. WHITE, M. D., *Assistant in Surgery at Charity Hospital.*

J. J. THOMAS, M. D., *Assistant in Surgery at Charity Hospital.*

C. C. STUART, A. M., M. D., *Assistant in Ophthalmology at Lakeside Hospital Dispensary.*

Committee of Administration, DRS. POWELL, SAWYER, LOWMAN.

ANDREW FLOWER, *Curator and Prosector.*

REQUIREMENTS FOR ADMISSION FOR SESSION 1898–9.

All candidates for admission (with the exceptions mentioned below) must pass an examination in the following subjects:

COMPULSORY SUBJECTS.

1. ENGLISH. Writing a passage from dictation. Correcting specimens of bad English. An essay of not less than three hundred words on an important event in the history of the United States, the subject to be announced at the time of examination.
2. LATIN. CÆSAR, The Gallic War, Books I, II and III. Latin Grammar. Translation of sentences from English into Latin.
3. MATHEMATICS. ARITHMETIC (including the metric system). Algebra to quadratic equations.

OPTIONAL SUBJECTS. (Two of these are required.)

1. GEOMETRY. The equivalent of Euclid, Books I, II and III, with easy deductions.
2. PHYSICS. Daniels' or Gage's Elementary Physics or an equivalent.
3. GREEK. Xenophon, Anabasis, Books I and II. Greek Grammar.
4. FRENCH. Translation at sight of ordinary French prose. French Grammar.
5. GERMAN. Translation at sight of easy passages of German prose. German Grammar.

1. Examinations for admission are conducted by the examining committee of the University, and not by the medical faculty.

The examination will be held Monday, October 3d, 1898, at 9:30 o'clock A. M. in the College Building.

2. Students in the Senior class of Adelbert College are permitted to take, as elective studies the first year branches of the medical college course. Such electives are counted toward

the academic degree, and in this way such students can save one year in their medical course.

Students from high schools, academies or colleges recognized by the Committee on Admission as in good standing, will be accepted without examination on presenting certificates or diplomas showing that the whole of the required subjects have been mastered.

ADMISSION TO ADVANCED STANDING.

Application for advanced standing in the course must be accompanied with satisfactory proof that the applicant has attended courses equivalent to the requirements of this college for the class to which admission is sought, and passed examinations in all branches which the class has taken.

Graduates in Medicine, and students who desire to take special courses without graduation, will be admitted without examination. Such special courses will not count in any way for the degree of Doctor of Medicine in this College.

DEPARTMENTS AND METHODS OF INSTRUCTION.

CHEMISTRY.

This course is taken in the first year. The first half year's work consists of six hours of recitation and eight hours laboratory work weekly. In the second half year organic chemistry will be taken, with four hours in lectures and recitations, and eight hours in the laboratory, weekly. The laboratory work covers a systematic study of the physical and chemical properties of the elements, and the methods of preparation with qualitative analysis. The second half year's lectures treat of organic chemistry, including such special subjects as urinary analysis, chemistry of foods, toxicology, and the quantitative methods related to medical and physiological chemistry. The laboratory work of

the second half year is devoted to medical and physiological chemistry, including the general actions of the various typical classes of compounds and the methods for their identification and separation. Quantitative methods and general urinary analysis consume the last weeks of the year.

ANATOMY.

The course in Anatomy consists of lectures upon descriptive and applied Anatomy, together with demonstrations, recitations and quizzes. In order to facilitate the work in Osteology, students of the first year are provided with separate portions of the skeleton, which they are permitted to take to their rooms for study. Three hours in recitations and eight hours, in suitable periods for dissecting, weekly, are given to Anatomy during the first year. Students are required to dissect all parts of the cadaver at least once. For demonstrations upon the cadaver and anatomical preparations the second year class is divided into a number of small sections, whose meetings take the form of anatomical conferences rather than of formal demonstrations. Each individual student thus has an excellent opportunity of becoming familiar with the various parts of the body, and of receiving direct personal instruction. Four hours a week are given to lectures in the second year, and ten hours a week to dissecting, with one hour a week to Applied Anatomy in the form of conferences, during the third year.

MATERIA MEDICA AND THERAPEUTICS.

The instruction in this department is designed to provide the student with a thorough practical knowledge of remedies of all kinds, their action and uses. It is carried on by recitations, lectures, quizzes and laboratory practice. The first year class will receive one hour a week in Materia Medica, and one hour a week in Pharmacy throughout the year. Special stress is laid on the preparation and the combining of medicines, in order to more fully demonstrate physical, chemical and physiological incompatabilities. There is provided a very complete cabinet of materia medica, including crude drugs, active principles and finished products, which is open to the student without charge, thus enabling the student to familiarize himself with the physical properties as well as with the action of medicines. The second and third year classes receive thorough and systematic instruction in Therapeutics and Pharmacology, including exercises in prescription writing, together with lectures on Massage, Dietetics, Regimen and

Climatology. To more clearly explain the action of medicines, in normal and diseased conditions of the system, the alteration in the physiological characters and functions of organs and secretions, and their decomposition, changes, assimilation, or elimination, illustrative lectures and experiments on animals are employed. In such laboratory practice in Physiological Pharmacology and Pharmaco-pathology each student is expected to conduct the experimentation under the guidance of the instructor.

PHARMACOLOGY.

The course is taken in the third year and consists of one lecture a week and two hours laboratory.

PHYSIOLOGY.

Four lectures a week, laboratory eight hours a week throughout the second year.

HISTOLOGY.

Working in this course eight hours a week for the first half of the first year, each student stains and mounts for himself more than 100 sections representing all the important tissues and organs of the body. Special courses on practical Histology can be arranged for in the summer vacation.

PHYSICS.

This course is given to the first year class, and given by Prof. F. P. Whitman of Adelbert College, one hour a week the first half year. Instruction is given by lectures and laboratory work. Mechanics, Sound, Light, Physical Optics, Theory and Practice of Electrical Measurements.

BIOLOGY

Is taught during the first half of the first year by Prof. F. H. Herrick of Adelbert College.

This course forms an introduction to the study of living things—animals and plants. It is designed to illustrate the fundamental structure and properties of living things. The student begins with a microscopical study of the cell, as illustrated by the simplest organisms, and by the tissues of the higher animals and plants. This is followed by the study of mould-fungi, bacteria and algae, and the chemical constituents of living matter. Animal Morphology, Vegetable Morphology, Vetebrate Embryology.

PATHOLOGY.

Instruction in this department is given by lectures, practical laboratory work and demonstrations of fresh and prepared specimens. The most important feature of this course is the practical laboratory work done by each student.

Bacteriology.—This course is given three half days a week of practical laboratory work from February 15th to the end of the first year. The subject is elucidated by informal lectures and demonstrations and animal experiments, as occasion requires. The student, after having prepared the various media required, is instructed in the principles of disinfection and sterilization, the bacteriological examination of air, water and soil, and the methods of cultivating, staining and studying bacteria. The technique being mastered, the study of the various pathogenic bacteria is begun, especial attention being devoted to the bacteria of wound infection, tuberculosis, typhoid fever, pneumonia, cholera, influenza and gonorrhoea. In addition to bacteria, mould fungi and yeasts are studied. Altogether from thirty to thirty-five different bacteria are studied by each student. Students are trained in methods of animal experimentation and in the employment of bacteriological methods in medical and surgical diagnosis. Students who prove themselves capable are permitted to pursue investigations along special lines on subjects assigned them by the professor in charge.

Pathological Histology comprises nine hours a week of laboratory work, for the first five months of the second year. The course begins with the systematic study of the various forms of tissue degeneration, such as fatty, albuminoid, hyaline, colloid, amyloid, and other degenerations, and the various forms of necrosis. This is followed by the study of inflammation in the frog's mesentery and in sections of hardened tissue, showing all the various forms of the inflammatory process, and of tissue degeneration. This completed, the infectious granulomata—tuberculosis, syphilis, leprosy, glanders, and actinomycosis,—are taken up, and the forms and special characters of the reaction of the tissues to the specific organisms of these diseases are demonstrated. As far as possible the study of the various pathological processes is based upon their aetiology, and in addition to human tissues, the material from the animal experiments of the bacteriological course is used for this purpose. The effects of bacterial and other toxines upon the tissues is taught in the same manner. Next follows the study of tumors. Based upon the above

as a groundwork, the pathological histology of the various organs and systems is studied, especial attention being paid to the upper air passages, the lungs, liver, spleen, kidneys, blood vessels, heart, stomach and intestines; and finally the course is completed with the study of the diseases of the lymphatic and genito-urinary systems. The use of fresh frozen sections of material derived from autopsies, the operating room and animal experiments, forms an important feature of the course. Each student receives and is required to stain, mount, carefully study and draw from two hundred and fifty to three hundred sections. At appropriate times during the course, the clinical microscopy of the sputum, urine, fæces, and blood, is taught. The pathological histology of the nervous system is studied in the first part of the third year, and consists of three hours a week of laboratory work for six or eight weeks. In this part of the course the various inflammatory and degenerative processes of the peripheral nerves and of the central nervous system are studied, the material being derived from animal experiments as well as from human autopsies.

Demonstrations of Gross Pathological Anatomy.—Demonstrations are made to second and third year students of the large amount of fresh material derived from autopsies and the surgical and gynecological clinics. Students are required to handle and describe specimens and to make diagnoses from the gross appearances, the microscopical diagnosis of tumors being an important feature. The hospital connections of the laboratory are such that students can be trained in making autopsies and in writing protocols of the lesions found.

General Pathology.—Two lectures and one quiz a week are given to the second year class. In these lectures the various infectious diseases, immunity, the degenerations and regenerations of tissue, the aetiology of tumors, and the special pathology of the various organs and systems are treated. The lectures are illustrated with cultures, animal experiments, drawings, photomicrographs and museum specimens.

Advanced and Special Work.—Several rooms, well lighted and equipped, are provided for physicians and advanced students who are prepared, wishing to undertake special work in Pathological Histology, Experimental Pathology and Bacteriology. The facilities and abundance of autopsy and surgical material brought to the laboratory, offer inducements to workers in these fields. Post-graduate students are admitted to the demonstrations of Gross Pathological Anatomy and to the lectures on General Pathology. Separate courses of post-graduate instruction in the laboratory may be arranged for during the year.

HYGIENE.

One lecture a week to the second year class. The course comprises a consideration of heredity; normal development of races; climatic and meteorological influences; essentials to life and health; effects of habits of life; symmetrical development of individuals; family and community sanitation.

MINOR SURGERY.

Demonstrations in bandaging and the applications of apparatus, and in dressing fractures are given regularly, one lecture or exercise a week through the second year. The students are divided into classes and are required to do the work themselves. A quiz is also conducted upon the lectures and clinics of surgery.

OBSTETRICS.

Instruction in this course begins with the third and continues through the fourth year, two lectures a week throughout. The plan includes didactic lectures, quizzes, practical demonstrations and bed side instruction. Lectures are illustrated by the free use of charts, diagrams, models and operations upon the manikin. For class-room demonstrations and for supplementary clinical instruction a perfect manikin is found of great service. Students are required to become familiar with the use of the various obstetric instruments. The Senior Class is divided into small sections and given practical work outside of schedule hours.

PHYSICAL DIAGNOSIS

Is taught one hour a week in the third and two hours a week in the fourth year, in connection with Medicine. During the third year the student is taught to recognize and elicit all of the physical phenomena of the circulatory and respiratory organs and abdominal viscera that are demonstrable by inspection, palpation and auscultation. Pathological cases are shown only as they are found necessary for the demonstration and explanation of physiological signs. At the end of the year each student is required to demonstrate the normal physical signs of the thorax and abdomen. During the fourth year physical diagnosis is taught from pathological cases. The students are required to demonstrate at every exercise, and are also given opportunity to practice in the dispensary and hospital wards. The final examination in this course is a practical one, as each student is required to examine a patient, describe the physical signs and make an eliminative physical diagnosis.

THE THEORY AND PRACTICE OF MEDICINE.

The Theory of Medicine is taught by recitations, quizzes, demonstrations and lectures. The Practice of Medicine is demonstrated clinically in the hospitals and dispensaries. Six hours a week are given to this course (including theory, practice and clinics) throughout the third and fourth years. Recitations or lectures are held three times a week, and students are expected to recite on lessons or subjects previously announced. To exemplify the lesson, cases from the college clinic are frequently used at the end of the hour. The aim is to combine clinicial and didactic exercises. Lectures are given at varying periods, as a resume of that which has already been studied. In the clinics cases are exhibited which students are expected to examine and make diagnoses. The hour is sometimes passed in a free discussion of the case or cases presented, in the form of a conference, or a lecture given with practical demonstrations of particular signs to individual students, according as one exercise or the other may seem the most profitable. As much as possible the student is brought in contact with the patient, and is expected to put into practice that which he has learned.

SURGERY

Is taught by means of theoretical lectures and clinical demonstrations, and occupies eight hours a week during the third and fourth years. In the theoretical lectures there is placed before the students a picture of the various physiological and pathological problems peculiar to surgery. The diseases peculiar to the different organs of the body, and the regions of special surgical importance are described and discussed, and an effort is made to render this instruction as systematic as possible, using in connection with it the surgical cases presented in the amphitheatre. The material at the disposal of the department for clinical instruction is ample. For this purpose are utilized all of the surgical cases in the Lakeside Hospital, Charity Hospital and the Dispensaries connected with these two institutions. In addition to this the material of the City Hospital is used during four months of the winter. The students are also invited, as nearly in turn as possible, to see a considerable number of private operations. In the clinics, which are held at Lakeside and Charity Hospitals, the students are permitted as often as the nature of the material will permit to examine cases and are taught the methods of diagnosis. They are also assigned, in turn, to service in

the Dispensaries, so that they see a large number of surgical cases, not only of the graver sort, which remain in the hospital, but also others of minor surgery.

In addition to work in the Dispensary, practical instruction is given in minor surgery and bandaging. The methods of reducing dislocations are demonstrated and the members of the class are carefully supervised in the application of splints and apparatus in fractures and other surgical affections as well as the application of plaster and silicate of potash bandages and jackets.

The Children's Wards at the Lakeside and City Hospitals afford ample material for the teaching of orthopedic surgery.

A course of operations on the cadaver is given to the senior class, in which the typical operations are performed, and opportunity is afforded to each student to make a number of operations himself upon the cadaver.

Beginning with the session of 1898-99, there will be a large increase in the amount of surgical instruction. To the present work will be added, during the third year, special laboratory instruction in surgical pathology and recitations in general surgery. Students will be assigned to examine patients and make written reports of diagnosis and treatment, reading and defending the same before the class. There will also be special instruction in the diagnosis and treatment of surgical affections, the material from the Dispensary being utilized for this purpose.

GYNÆCOLOGY.

Is taught by didactic lectures, one hour a week during the third year, and clinically, four hours a week through the fourth year. The cases admitted to the wards of Lakeside and Charity Hospitals for laceration of the perinaeum and for vaginal, vesical, uterine, tubal and ovarian disease, will be used for the purpose of instruction either at the regular clinics in the amphitheatre or at the bedside. Instructions will be given in the wards upon the after treatment of cases which have been operated upon, the management of such cases during the period immediately following operation and during the period of convalescence being dealt with in detail. The privilege of attending private operations will be extended to a limited number of the Senior Class in turn, as opportunity permits. As a rule each student will have an opportunity of performing some minor operation during the session. A course in Gymnaecological Pathology will also be given. The work in the dispensaries at Lakeside and Charity Hospitals will include history taking; the ordinary

methods of examination; the diagnosis and treatment of cases. These classes are held four times a week at the hospitals and each student, in his turn, will have an opportunity of receiving instruction in this work. A certain number of the more obscure cases will be referred from the dispensaries and wards for examination and treatment under anesthesia. A limited number of students in turn will be permitted to examine such patients, and suitable cases will be operated upon before the class. The material is plentiful and accessible.

DISEASES OF CHILDREN.

The instruction in this course is given one hour a week during the third year. It consists of a clinical lecture with recitations on the subjects touched on the previous week. The illustrative material for the lecture is drawn from the Lakeside Hospital Dispensary and Children's Ward. From these sources are obtained plentiful illustrations of congenital and acquired deformities and diseases.

DISEASES OF NOSE, EAR AND THROAT.

The instruction in the course on these diseases is given during the third year. One hour each week is devoted to the presentation of cases illustrating various phases of disease, and one hour to the examination of cases, manipulation of instruments, application of remedies, etc., by members of the class.

GENITO-URINARY DISEASES.

A preliminary course of fifteen didactic lectures, one each week, is given during the first half of the third year, with clinical instruction, one hour each week, during the last half of the third year. This branch is abundantly supplied with material affording opportunity for the student to become familiar with the various diseases of the genito-urinary tract.

DERMATOLOGY AND SYPHILOLOGY.

Instruction is given in these branches to the fourth year class and consists chiefly of clinical work. In the clinics the cases are classified so as to impress the student with the different varieties and phases each disease may assume. In this way the common diseases of the skin, as well as many of the more rare forms are studied, and the progress under treatment noted. The various pathologi-

cal conditions met with are demonstrated microscopically, and by the aid of colored plates, wax models and charts the normal and pathological conditions of the skin are illustrated. During the year each student is called upon to make diagnoses and outline courses of treatment under the immediate supervision of the instructor. The clinical material is abundant.

NEUROLOGY.

Instruction in this branch of medicine is clinical and occupies one hour a week throughout the fourth year. In connection with the cases shown, the class is instructed in the use of the different forms of electric current for diagnosis and treatment, and in other diagnostic methods.

OPHTHALMOLOGY.

The method of instruction is largely clinical with didactic teaching interspersed. It is given to the fourth year class. The class is divided into sections, each one being assigned in rotation to cases for examination in the dark room. Each student will be given cases for special study, and is expected to make a report upon them before the class, and will be subject to quizzing by members of the class and the instructor. The aim is to teach particularly the diagnosis and methods of treatment of the external diseases of the eye and, as time will permit, a working knowledge of the uses of the ophthalmoscope. The eye department has separate wards in Lakeside Hospital in which students have opportunities for seeing work at the bedside. The class will be divided into sections for instruction with ophthalmoscope, and for daily work in the dispensary rooms during the year. This department has abundant facilities and appliances for giving instruction in diseases of the eye with rich material for the study of its special diseases. A large "dark room" with 10 lights, a Jaral-Schiötz Ophthalmometer, a perimeter, test cases and ophthalmascopes for practical ophthalmology are provided.

PREVENTIVE MEDICINE

Is taught by lectures and conferences, one hour a week during the fourth year. The course includes the pathology, natural history and methods of limiting the spread of infectious diseases; the duties and powers of public officers of health; value and methods of keeping vital statistics; the relation and duties of the physician to the public in matters relating to the public health, etc.

MEDICAL JURISPRUDENCE

Is taught by lectures and quizzes during the first half of the fourth year, one hour each week. It includes instruction as to what constitutes malpractice; the value of evidence; the duties of the physician in criminal cases, and the rights of the physician for himself and those under his care, etc.

TEXT BOOKS.

Chemistry—Witthaus' Manual of Chemistry, Pellew's Manual of Medical and Physiological Chemistry, Prescott & Johnson's Chemical Analysis.

Anatomy—Gray's, (13th edition), Moon's.

Histology—Stöhr's Histology.

Bacteriology—Abbot, Sternberg.

Materia Medica—U. S. or National Dispensatory.

Physics—Daniels' or Carhart's University Physics.

Biology—General Biology, Sedgwick & Wilson. Practical Biology, Huxley & Martin.

Physiology—Stewart's Manual.

Pathology—Ziegler, Orth's Diagnostik, Sims Woodhead.

Therapeutics and Pharmacology—Wood, Brunton, Bartholow, Shoemaker, White, Flueckiger, Schmiedeberg.

Medicine—Strumpell, Osler.

Surgery—American Text-book of Surgery, Koenig's Surgery, Warren's Surgical Pathology.

Gynecology—Clinical Gynecology (Medical and Surgical), American Text-book of Gynecology. Reference, Pozzi, Fritsch, Hart & Barbour, Robb, "Aseptic Surgical Technique."

Obstetrics—Lusk, Reynolds, Davis, Playfair.

Dermatology—Crocker, Van Harlingen, Morrow's System of Dermatology.

Neurology—Gowers, Dana, Herter, Dercum.

Ophthalmology—Norris & Oliver, De Schweinitz, Fuchs, Noyes.

Nose, Ear and Throat—McBride, Macdonald, Burnett, Politzer, Bosworth.

Hygiene and Preventive Medicine—Stevenson & Murphy.

Genito-Urinary—Morrow's System of Genito-Urinary Diseases, Hayden.

LABORATORIES.

CHEMISTRY.—A new chemical laboratory building has been erected, during the past year, to the south of and connected to the main college building, with over 6,500 square feet of floor space. The laboratories are thoroughly equipped for all the details of the course, and each student has a separate desk assigned him with a general supply of apparatus. Extra and special apparatus is furnished upon requisition. A special laboratory has been furnished for the work of advanced students and every effort made to make it as complete in its details as possible, and to provide facilities for original and special work. The chemical lecture room is one of the most complete in its equipment and offers every opportunity for the fullest course of illustrated lectures.

ANATOMY.—The dissecting room is well lighted with electricity, perfectly heated and ventilated and provided with modern appliances. The anatomical rooms have about 3,000 square feet of floor space. An excellent refrigerator is placed in the basement of the college building, in which anatomical material can be perfectly preserved at all seasons of the year.

BACTERIOLOGY.—The work in bacteriology is carried on in the pathological laboratory. Students are required to provide their own material for drawings. Microscropes, cultures and animals are provided without charge, with material for staining and mounting specimens to be retained by students, at cost. The laboratory is in connection with the pathological laboratory, and has the benefit of excellent lighting with space for individual work.

PHARMACOLOGY.—The laboratory for this branch has a large, well-lighted room, 30 by 70 feet, devoted exclusively to

this subject. Each student is provided with a separate outfit, with ample space for individual work. Apparatus and material furnished without extra charge.

PHYSIOLOGY AND HISTOLOGY.—The teaching laboratories comprise four well-lighted rooms with an aggregate floor space of more than five thousand square feet. The rooms for histology and experimental physiology are each 50 by 30 feet, the room for chemical physiology measures 35 by 30 feet, and the lecture room, devoted exclusively to physiology, is capable of accommodating one hundred and forty students. The equipment for teaching practical physiology is sufficient to allow more than forty men being taken in a class at one time, some in the chemical and some in the experimental room.

PHYSICS.—The facilities for the study of physics are fully provided in the new laboratory building. This is a three story building, containing large lecture and laboratory rooms for class exercises and smaller apartments for individual work. The department is equipped with a large variety of modern apparatus bearing upon the courses offered. Especial attention has been paid to heating, lighting and ventilation.

BIOLOGY.—The biological laboratory is equipped with modern apparatus for conducting both elementary and advanced work. Microscopes are provided without extra charge, including all necessary attachments and accessories. It has a museum containing valuable collections of mammals, birds, fishes and invertebrates, and a teaching collection, representing the comparative anatomy and development of animals.

The buildings for the laboratories of Physics and Biology stand on the University grounds and both are new.

PATHOLOGY.—The pathological laboratory occupies the entire west third floor, 30 by 80 feet, with a special room for research

work and a museum and professors' room. The teaching laboratory room, 30 by 75 feet, is on the east fourth floor, and affords each student separate locker and ample table space. Apparatus, instruments and teaching materials are provided without extra charge.

HOSPITALS.

LAKESIDE HOSPITAL.

The new Lakeside Hospital occupies a plot of ground 400 feet long by 380 feet deep, on the bank overlooking Lake Erie, about five minutes walk from the college building. It affords accommodation for 250 patients. The staff is composed entirely of members of the faculty of this college. The hospital has an amphitheater seating about two hundred students for the surgical classes, and a smaller one with a seating capacity of over one hundred for the medical classes. On the third floor of the dispensary building are two lecture rooms, each capable of seating 50 to 75 students. There are nine resident assistants for the departments of Surgery, Gynecology, Medicine, Ophthalmology, children's diseases, etc. These positions are open only to the students of this college, and afford great advantages.

ST. VINCENT'S (CHARITY) HOSPITAL.

This is one of the oldest and best known institutions in the city and State. It has between 75 and 100 beds. The staff is selected by the faculty, and all the clinical material of the hospital is utilized for instruction in this college. There are four hospital positions open each year to the students of this college only.

CITY HOSPITAL.

This institution is under municipal control. It accommodates 150 to 175 patients continually in the adult department and has a new building for children with 250 to 275 beds. From September to January regular clinics in medicine, gynecology, surgery, neurology and cutaneous and venereal diseases are given here by members of this faculty exclusively. The insane department of this hospital affords material for clinical instruction in mental diseases. Frequent autopsies are held and abundant material for pathological demonstrations obtained. The resident staff is selected by competitive examination, and the students of this college are eligible.

HOME OF MATERNITY.

This is a department of Charity Hospital, with a separate building, devoted exclusively to women during their confinement, and the after care of mothers and children. From 100 to 150 cases are annually received, the members of the Senior class being assigned to them in rotation, so that each student sees from two to five cases of labor under the supervision of the Professor of Obstetrics, who has sole charge of the department, with its children's ward.

The clinical facilities of this college comprise, throughout the course, the 250 beds of Lakeside Hospital; the 75 to 100 beds of Charity Hospital; the College Dispensaries; the Maternity and Children's Home; and the 300 beds of the City Hospital the first four months of each college year. From 25 to 30 resident positions are open to the graduates of this college in the hospitals of this city.

LAKESIDE HOSPITAL SERVICE.

STAFF.

Medicine.—DR. H. H. POWELL, DR. J. H. LOWMAN, DR. H. S. UPSON.

Surgery.—DR. D. P. ALLEN.

Diseases of Children.—DR. E. F. CUSHING.

Ophthalmology.—DR. B. L. MILLIKIN.

Gynecology.—DR. H. ROBB.

Dermatology.—DR. W. T. CORLETT.

Pathology.—DR. W. T. HOWARD, JR.

CHARITY HOSPITAL SERVICE.

STAFF.

Consulting Physicians.—DR. H. J. HERRICK, DR. G. C. ASHMUN. DR. B. W. HOLLIDAY, DR. J. H. LOWMAN.

Consulting Surgeons.—DR. G. C. E. WEBER, DR. D. P. ALLEN.

Consulting Ophthalmologist.—DR. B. L. MILLIKIN.

Consulting Dermatologist.—DR. W. T. CORLETT.

Visiting Physicians.—DR. H. J. LEE, DR. J. E. COOK, DR. J. P. SAWYER, DR. T. A. BURKE.

Visiting Surgeons.—DR. F. E. BUNTS, DR. C. A. HAMANN.

Visiting Gynecologist.—DR. W. H. HUMISTON.

Visiting Ophthalmologist.—DR. W. E. BRUNER.

Pathologist.—DR. W. T. HOWARD, JR.

CITY HOSPITAL SERVICE.

STAFF.

Medicine.—DR. J. E. DARBY, DR. C. F. HOOVER.

Surgery.—DR. F. E. BUNTS, DR. C. A. HAMANN.

Neurology.—DR. H. S. UPSON.

Gynecology.—DR. W. H. HUMISTON.

Dermatology.—DR. W. T. CORLETT.

Pathology.—DR. W. T. HOWARD, JR.

Ophthalmology.—DR. W. E. BRUNER.

DISPENSARIES.

Free Dispensaries are maintained at Lakeside and Charity Hospitals with daily service except Sundays. These college dispensaries were established by the Hurlbut and Huntington Funds, and afford treatment to more than eight thousand cases annually.

LAKESIDE HOSPITAL DISPENSARY SERVICE.

Medicine.—DR. J. H. LOWMAN, Director.
DR. C. F. HOOVER, Physician in Charge.

Surgery.—DR. D. P. ALLEN, Director.
DR. W. H. NEVISON, Surgeon in Charge.

Obstetrics.—DR. H. H. POWELL, Director.
DR. F. S. CLARK, Obstetrician in Charge.

Gynecology.—DR. H. ROBB, Director.
DR. WALTER R. LINCOLN, Gynecologist in Charge.

Nervous Diseases.—DR. H. S. UPSON, Director.
DR. H. L. SPENCE, Neurologist in Charge.

Ophthalmology.—DR. B. L. MILLIKIN, Director.
DR. W. E. BRUNER, Ophthalmologist in Charge.
DR. C. C. STUART, Assistant.

Dermatology and Genito-Urinary Diseases.—DR. W. T. CORLETT, Director in Charge.

Diseases of Nose, Ear and Throat.—DR. J. M. INGERSOLL, DR. WILLIAM R. LINCOLN, in Charge.

CHARITY HOSPITAL DISPENSARY SERVICE.

Medicine.—DR. J. P. SAWYER, Director.
DR. N. O. PAULIN, Physician in Charge.

Surgery.—DR. F. E. BUNTS, Director.
DR. D. K. WHITE, DR. J. J. THOMAS, in Charge.

Gynecology.—DR. W. H. HUMISTON, Director.
DR. H. T. CLAPP, DR. O. T. THOMAS, in Charge.

COURSES OF STUDY.

FIRST YEAR.

CHEMISTRY, *First Half Year.*—
Recitations, six hours a week.
Laboratory work, eight hours a week.

CHEMISTRY, *Second Half Year.*—
Lectures and Recitations, four hours a week.
Laboratory work, eight hours a week.

ANATOMY.—Recitations, three hours a week.
Dissecting, eight hours a week.

HISTOLOGY.—Lecture, one hour a week. Laboratory, seven hours a week, first half year.

BACTERIOLOGY.—Nine hours a week, after March 1st.

MATERIA MEDICA.—One hour a week.

PHARMACY.—One hour a week.

PHYSICS.—Lectures and laboratory work, one hour a week, first half year, at Adelbert College.

BIOLOGY.—One hour a week, first half year, at Adelbert College.

SECOND YEAR.

ANATOMY.—Lectures, four hours a week.
Dissecting, ten hours a week.

APPLIED ANATOMY.—Lecture, one hour a week.

PHYSIOLOGY.—Lectures, four hours a week.
Laboratory work, eight hours a week.

GENERAL PATHOLOGY.—Lectures, two hours a week.
Quiz, one hour a week.

PATHOLOGICAL HISTOLOGY.—Laboratory work, nine hours a week to March 1st.

THERAPEUTICS.—Lectures, two hours a week.

HYGIENE.—Lecture, one hour a week.

MINOR SURGERY.—Lecture or exercise, one hour a week.

CLINICS.—Attendance on Medical and Surgical Clinics during last half year, as time permits.

THIRD YEAR.

THERAPEUTICS.—Lectures, two hours a week.

PHARMACOLOGY.—Lectures, two hours a week.
Laboratory work, two hours a week.

GROSS PATHOLOGICAL ANATOMY.—Demonstrations, two hours a week.

OBSTETRICS.—Lectures, two hours a week.

PHYSICAL DIAGNOSIS.—Lecture, one hour a week.

MEDICINE.—Lectures, four hours a week.
Clinics, two hours a week.

SURGERY.—Lectures, two hours a week.
Clinics, six hours a week.

GYNECOLOGY.—Lectures, one hour a week.

DISEASES OF CHILDREN.—Clinics, one hour a week.

DISEASES OF NOSE, EAR AND THROAT.—Lectures, one hour a week.

GENITO-URINARY DISEASES.—Lectures, one hour a week, half the year.
Clinics, one hour a week, half the year.

APPLIED ANATOMY.—Lecture, one hour a week.

DISPENSARY AND GENERAL CLINICS.—As time permits.

FOURTH YEAR.

GROSS PATHOLOGICAL ANATOMY.—Demonstrations, two hours a week.

OBSTETRICS.—Lectures, two hours a week.
Clinics, as material permits.

MEDICINE.—Lectures, four hours a week.
Clinics, two hours a week.

SURGERY.—Lectures, two hours a week.
Clinics, six hours a week.

GYNECOLOGY.—Clinics, four hours a week.

PHYSICAL DIAGNOSIS.—Practice, two hours a week.

NEUROLOGY.—Clinics, One hour a week.

DERMATOLOGY.—Lectures, one hour a week, first half year.
Clinics, one hour a week, second half year.

OPHTHALMOLOGY.—Lecture, one hour a week, first half the year. Dispensary practice, second half the year.

JURISPRUDENCE.—Lectures, one hour a week, first half the year.

PREVENTIVE MEDICINE.—Lectures and quizzes, one hour a week.

DISPENSARY AND HOSPITAL CLINICS.—Practice, as time permits.

REQUIREMENTS FOR GRADUATION.

1. All candidates for the degree of Doctor of Medicine must have satisfactorily completed four years of medical study, the first three of which may have been spent either in this college or in schools whose courses are accepted by the faculty. The fourth year course must be taken and the final examination passed in this college. Candidates from other schools may be further examined at the discretion of the faculty, in any or all of the branches of study included in the first three years of the curriculum of this college.

2. Every candidate for graduation must present satisfactory evidence of good moral character and of being not less than twenty-one years of age.

Any candidate for graduation failing in two or more branches at the final examination, will not be again examined until the final examinations of the succeeding year.

FEES.

The fees are $125 a year, including tuition and all laboratory expenses, except the price of anatomical material and breakage. All fees shall be paid before October 20th of each year, except that students who prefer may pay $75 by October 20th and $55 by March 15th of the college year. No student shall be permitted to present himself for examination who has

not paid in full all dues and liabilities. Students who wish to pay for the entire four years' course by October 20th, of their first year, will be allowed a reduction of $50 on the whole amount. A deposit of $10.00 is required at the outset, to cover breakage in laboratories, etc.

INFORMATION TO STUDENTS.

The *College Building* stands at the corner of Erie and St. Clair streets, about five minutes' walk from the center of the city.

Lakeside Hospital fronts on Lake street, corner of Muirson—five minutes' walk from the college. *Charity Hospital* fronts on Perry street, corner of Central avenue. *Home of Maternity* is in the rear of "Charity" on Marion street. The *City Hospital* stands fronting Scranton avenue and is reached by either Jennings avenue or Pearl street and Brooklyn cars.

Any diplomas, certificates of courses of study, or other evidence of scholarship which may make clear the student's standing, should be brought at the outset and placed in the hands of the secretary.

COST OF LIVING.

Good board can be secured at from $3.00 to $5.00 a week; and furnished rooms from $5.00 to $10.00 a month. By forming "clubs" students are able to bring their living expenses considerably below these prices. The janitor at the college building keeps a list of boarding places for the convenience of students. The Case Library, Public Library and Hatch Library offer more than 200,000 volumes in all departments of literature and science, all of which are accessible to the students of this college. By an arrangement with

Goodrich House, which stands within one block of the college, a gymnasium with bathing accommodations is available to the students at a very small cost. Also at the Y. M. C. A. building (which is but a short walk away) similar opportunities are afforded.

MUSEUMS.

Rooms in the college building are set apart for the preservation of anatomical and pathological preparations, casts and specimens. Persons not connected with the college who have specimens they wish preserved can place them in these rooms, with the owners' names attached and such histories, descriptions or remarks as they choose to give respecting them.

EXAMINATIONS FOR ADMISSION

1897-98.

ENGLISH.

O. F. EMERSON, PH. D.

Professor of Rhetoric and English Philology in Adelbert College, Western Reserve University. (2 hours).

1. Write a short essay of not more than three hundred words on one of the following subjects: The Parks of the City of Cleveland. Why I study medicine. The story of one of the plays of Shakespeare.

2. Explain the use of the following marks of punctuation: Period, semi-colon, dash, marks of quotation, interrogation and exclamation.

3. Define a sentence; a paragraph; argumentation; description.

4. Write a letter to the Dean of the Medical College of Western Reserve University, applying for admission to the College, and giving a brief account of your preparation.

5. Give an outline (200 words) of some story or prose sketch which you have recently read.

N. B.—Pay special attention in your paper to spelling, punctuation and paragraphing.

PHYSICS.

F. P. WHITMAN, A. M.

Professor of Physics in Adelbert College, Western Reserve University. (2 hours).

1. Define inertia, velocity, acceleration.

2. State the laws of liquid pressure.

3. State Boyle's law of gaseous pressure. Explain the action of the common pump.

4. Define energy and work. Give examples of the conservation of energy.

5. Describe the mercury thermometer and state how it is used to measure temperature. Describe the Fahrenheit and centigrade thermometer scales.

6. Define latent heat of fusion; specific heat; calorie.

7. State the laws of reflection from a plane surface; explain the action of a lens in forming an image. Illustrate by diagrams.

8. State Ohm's law of electric conduction. Define the three quantities involved, and name the unit in which each is measured.

9. Describe the effect of a current passing through acidulated water.

10. Explain how an induced current may be set up. Describe an induction coil.

ARITHMETIC.

C. J. SMITH, A. M.

Professor of Mathematics in Adelbert College. (2 hours).

1. Find highest common factor of 192, 576, 1760.

2. After making $4\frac{1}{2}$ miles a man has accomplished

$$\frac{2\frac{1}{2} - 1\frac{1}{3} \text{ of } 2\frac{1}{4} + 1\frac{7}{9}}{(2\frac{1}{2} - 1\frac{1}{3}) \text{ of } (2\frac{1}{4} + 1\frac{7}{9})} \text{ of } \frac{\frac{2}{11} + \frac{1}{2}}{\frac{4}{7} - \frac{3}{11}}$$

of his journey; how far has he still to walk?

3. Divide .008 by 12.8.

4. 10 mi. 7 fur. 36 rd. is 75% of what?

5. $\sqrt[3]{19683}$ = what?

ALGEBRA.

1. Reduce to its simplest form as a single fraction,

$$\frac{\dfrac{\sqrt{\dfrac{x}{x^2+1}}\,(\sqrt{x^2+1}+1)\;\sqrt{\dfrac{x}{x^2+1}}\,(\sqrt{x^2+1}-1)}{(\sqrt{x^2+1}+1)^2}}{\dfrac{\sqrt{x^2+1}-1}{\sqrt{x^2+1}+1}}$$

2. Find the continued product of
$x-(2+\sqrt{3})$, $x-(2-\sqrt{3})$, $x-(1-\sqrt{-1})$, $x-(1-\sqrt{-1})$.

3. Solve the following equations: @ $\left\{\begin{array}{l} 2x+4y-3z=22 \\ 4x-2y+5z=18 \\ 6x+7y-\ \ z=63 \end{array}\right\}$

4. Find two numbers the greater of which shall be to the less as their sum to 42, and as their difference to 6.

GEOMETRY.

1. If an equilateral triangle is inscribed in a circle, the distance of each side from the center of the circle is equal to half the radius of the circle.

2. The bisector of an angle of a triangle divides the opposite side into segments proportional to the other two sides.

3. To inscribe a square in a given triangle.

4. The sum of two sides of a triangle is greater than the third side.

LATIN.

V. J. EMERY, A. M.

Instructor in Latin in Adelbert College, Western Reserve University. (2 hours.)

1. Translate literally: Cæsar, "Die Bello Gallico," Book I, Chap. 9, 1-9.

Relinquebatur una per Sequanos via qua Sequanis invitis propter augustias ire non poterant. His cum sua sponte persuadere non possent, legatos ad Dumnorigem aeduum mittunt, ut eo deprecatore a Sequanis impetrarent. Dumnorix gratia et largitione apud Sequanos plurimum poterat, er Helvetiis erat amicus, quod ex ea civitate Orgetorigis filiam in matrimonium duxerat, et cupiditate regni adductus novis rebus studebat, et quam plurimas civitates suo beneficio hebere obstrictas rolebat.

2. Decline: hic, haec, hoc. Conjugate *impero*, "command" and *tego*, "cover," in the Indicative present and perfect, active and passive.

3. Give the English derivatives of the Latin words in the first five lines of (1).

4. Translate: Cæsar, I, 34, lines 1 to 5. Quam ob rem placuit ei ut ad Ariovistum legatos mitteret, qui ab eo pastularent, uti aliquem locum medium utriusque colloquio deligeret; velle sese de re publica et summis utriusque rebus cum eo agere. Ei legatione ariovistus respondit.

5. (*a*) Cæsar was informed by scouts (explorator) that the Germans had crossed the Rhine.

(*b*) Labienus led two legions into winter quarters.

(*c*) In the consulship of Gn. Pompeius and M. Crassus, Cæsar waged war in Gaul.

(*d*) The soldiers took the city by storm. [Took-by-storm, translate by one word.]

(*e*) The army hastened by forced marches to the Nervii.

EXAMINATIONS, 1896-97.

HISTOLOGY.

WRITTEN AND PRACTICAL EXAMINATIONS.

First Half of Class.—Monday, December 21st, 1896, 9 A. M. to 12 M.
Second Half of Class.—Tuesday, December 22d, 1896, 1 to 4 P. M.

1. Stain, mount, identify, draw and describe at length the specimens labeled A, B, C, D and E. A, B and C are sections, and must not be teased.

2. Identify the stained specimens labeled 1 to 10.

First Half of Class.—A, lymph gland; B, pyloric end of stomach; C, kidney; D, fresh sciatic nerve of frog; E, fresh ligamentum nuchae of ox. 1, tonsil: 2, thyroid; 3, injected kidney; 4, scalp; 5, ovary; 6, retina; 7, fallopian tube; 8, testicle; 9, cerebellum; 10, skin with sweat glands.

Second Half of Class.—A, spleen; B, testicle; C, liver; D, fresh striped muscle of frog. 1, suprarenal capsule; 2, ureter; 3, serous salivary gland; 4, cornea; 5, uterus; 6, tendon; 7, ligamentum nuchae; 8, thymus; 9, cardiac end of stomach; 10, dense bone.

FIRST YEAR PHYSIOLOGY.

PRACTICAL EXAMINATION.

Two of the following experiments were assigned to each student after entering the examination room.

1. Determine the nature of the coloring matter in solutions A, B, C, D, E and F.

[A, acid-hæmatin; B, methæmoglobin; C, hæmochromogen; D, oxyhæmoglobin; F, carbonic oxide hæmoglobin; F, reduced hæmoglobin.]

2. Obtain by two methods a non-coagulable plasma from the animal provided. Demonstrate the rôle of lime salts in coagulation.

3. Estimate the relative amount of hæmoglobin in solutions A and B.

4. Estimate the specific gravity of a small sample of the blood provided.

5. Take tracings to demonstrate the action of the vagus on the frog's heart.

6. Same as in 2 in the second year examination.

7. Set up a plethysmograph for obtaining a tracing from the arm.

8. Take tracings showing the effect on the respiratory movements in the animal provided, of stimulation of the vagus and sciatic, of section of both vagi, and of asphyxia.

9. Same as 4 in second year examination.

10 to 13. Same as 5 to 8 in second year examination.

14. Take tracings to show the influence of the load on the form of the muscle-curve.

15. Take tracings to show the influence of fatigue on the form of the muscle-curve.

16. Demonstrate the seat of paralysis in curare poisoning.

SECOND YEAR PHYSIOLOGY.

WRITTEN EXAMINATION, TUESDAY, MAY 11TH, 1897, 1 TO 4 P. M.

1. Describe the effects of stimulation of the central end of one vago-sympathetic (in the dog), (*a*) when the other is intact; (*b*) when the other has been cut.

2. What are the chemical and physical differences, between: (*a*) arterial and venous blood; (*b*) inspired and expired air. Explain as fully as you can the manner in which these differences are brought about.

3. Give a full account of the influence of the nervous system on the secretion of the digestive juices.

4. Mention the various ways in which glycosuria may be produced and give what evidence you can as to the source of the sugar in each case.

5. What are the chief sources and seats of heat production in the body? Explain, in as great detail as possible, the mechanism by which the temperature of homoiothermal animals is kept constant.

6. Give the evidence for and against the existence of specific trophic nerve fibres.

7. What symptoms would be produced:

(*a*) By complete unilateral paralysis of the third nerve?

(*b*) By destruction of the occipital cortex on one side?

(*c*) By destruction of the fibres in the genu of the internal capsule on one side?

(*d*) By destruction of the *right* inferior frontal convolution?

N. B. Wherever it is possible, use sketches to illustrate your answers.

Only 5 questions are to be attempted, of which question 7 must be one.

PRACTICAL EXAMINATION.

WEDNESDAY, MAY 5TH, 1897, 9 A. M. TO 12 M. AND 1:30 TO 4:30 P. M.

THURSDAY, MAY 6TH, 1:30 TO 4:30 P. M. AND

FRIDAY, MAY 7TH, 9 A. M. TO 12 M.

The following experiments were set, two being assigned to each student after entering the examination room. The candidate is only supplied with such apparatus or reagents as he may ask for.

1. Take tracings to show the effect on the blood-pressure of stimulation of the vagus (peripheral and central end) and of the central end of the sciatic nerve, and of division of both vagi.

2. Expose the heart of the animal provided and demonstrate the action of the vagus on it, adopting the necessary measures for keeping the animal alive.

3. Take tracings to demonstrate the action of the vagus on the frog's heart.

4. Determine what, if any, of the digestive ferments are present in the solutions A, B and C.

[A, pancreatic extract; B, saliva; C, gastric extract.]

5. Determine what, if any, abnormal substances are present in urines A, B, C, D, E, F, G.

[A, contained bile; B, blood; C, indican; D, albumin; E, sugar; F, bile and albumin; G, albumin and sugar.]

6. Determine the nature of the sediment in the specimens of urine A and B. [A, uric acid; B, triple phosphate.]

7. In urine A determine the percentage amount of urea present, taking for your calculation 1 cc. of nitrogen as equivalent to .00282 grm. of urea.

8. In urine B determine whether any abnormal constituent is present. If so, make a quantitative estimation of its percentage amount. [The urine contained 2.5 per cent. of glucose.]

9. Make a quantitative determination of the phosphoric acid in urine Y.

10. Prepare glycogen, and demonstrate its chief reactions and properties, as far as you can.

11. Demonstrate, on the animal provided, that sugar and egg-albumin when injected into the blood are excreted in the urine.

12. Take tracings for the determination of the latent period of a frog's skeletal muscle.

13. Demonstrate the paradoxical contraction.

14. Demonstrate the seat of paralysis in curare poisoning, and the seat of exhaustion in fatigue of the muscle-nerve preparation with indirect stimulation, and in fatigue produced by voluntary contraction.

15. Set up the apparatus necessary for verifying Pflüger's formula of contraction, and demonstrate at least one of the cases.

16. Demonstrate the effects produced on a frog by excision of the cerebral hemispheres.

17. Expose the cortical motor areas in the animal provided and demonstrate the effects produced by stimulating the various centres.

ANATOMY.

An oral examination was held in Anatomy.

BACTERIOLOGY.

Examination on micro-organisms held May 14, 1897, for the first year class.

1. State the various ways of studying micro-organisms.

2. What is meant by the following terms, pathogenic, saprophytic, anærobic, facultative parasite, as applied to micro-organisms? What are spores; give a good method for spore staining.

3. What are bacteria? Give the ordinary morphological classification of bacteria, with a short description of the main morphological characters of each variety.

4. What are mould fungi? Give an account of their more important biological characters and name the forms pathogenic for man.

5. Describe the main morphological and cultural properties of the yeast fungi and state their more important uses in nature.

6. What are streptothrices? Describe one form pathogenic for cattle and man.

7. Describe the morphological and cultural properties of the amœba coli and name the pathological processes in which it has been found. Name two infusoria parasitic for man.

8. Describe the morphological and cultural characters of the B. diphtheriæ, of the staphylococcus py. aureus.

9. State the main points in the differential diagnosis between the B. typhosus and the B. coli communis.

And either one of the next two questions:

10. Signify which of the following micro-organisms stain by Gram's method. Staphylococcus py. albus, streptococcus py., gonococcus, B. of Friedlænder, B. of Wright and Mallory, B, of Pfeiffer, spirillum of cholera, micrococcus lanceolatus, streptothrix actinomyces.

11. Which of the following liquify gelatine, amœba coli, staphylococcus py. citreus, micrococcus lanceolatus, streptothrix actinomyces streptococcus py., B. of Friedlænder, B. prodigious, Proteus Zenkeri, micrococcus tetragenus.

NOTE.—The student is required to record his laboratory observations on the micro-organisms studied in a specially arranged note-book. At the end of the course this book is critically examined and the student's grade is determined in a large part by the character of this laboratory work.

PATHOLOGICAL HISTOLOGY.

A written examination was held May 1, 1897. Each student was given his choice by number of three of five unknown sections, ready stained and mounted. These sections showed as follows: (1) acute croupous pneumonia (grey Hepatization). (2) broncho-pneumonia. (3) atrophic Cirrhosis of the liver. (4) arterio-chratic Nephritis. (5) Carcinoma of uterus.

The student was required to write out an accurate, detailed description of the appearances in each of his three chosen specimens with both the high and the low powers of the microscope. Drawings to illustrate the descriptions were required.

The student was next instructed to trace the various steps of the processes described and finally to make a diagnosis.

The time was limited to four hours. Each student was required to hand in with his examination paper a set of drawings illustrating all of the various lessons studied in the course.

Class work and drawings counted in the general average.

GENERAL PATHOLOGY.

An oral examination was held May 1, 1897. Students were asked questions involving the general principles of pathology, the aetiology of infectious and non-infectious diseases, the portals of entry of micro-organisms with the body, the bacterial flora of the body, susceptibility, immumity, the bacteria of wound infection, typhoid fever, pneumonia, arterio-sclorosis, the various lesions of syphillis and tuberculosis, etc., etc.

MEDICINE.

1. TYPHOID FEVER.
   - (*a*). What is the chief lesion?
   - (*b*). What are some of the other lesions?
   - (*c*). How does the temperature curve differ from that of malarial fever?

(*d*). Name the causes of death.
(*e*). Give the formula of Brand in the bath treatment.
(*f*). Describe a treatment other than the bath treatment.
(*g*). What is the significance of an accentuation of the second pulmonic sound?
(*h*). How would you meet that emergency?

2. EMPYEMA OF THE PLEURA.
(*a*). Define it.
(*b*). In conjunction with what diseases is it found?
(*c*). What micro-organisms usually cause it, and which ones are the most and which the least virulent?
(*d*). Give differential diagnosis between Empyema and Pneumonia.
(*e*). What is the prognosis and treatment?
(*f*). What effect does an Empyema have on the heart?

3. ARTERIAL SCLEROSIS.
(*a*). What are some of the causes of general arterial sclerosis?
(*b*). What is arterio-sclerosis of the heart?
(*c*). What are some of its symptoms?
(*d*). Suggest a line of treatment for cardiac arterio-sclerosis.
(*e*). How is cerebral arterio-sclerosis sometimes manifested?
(*f*). What changes in the urine are observed in renal arterio-sclerosis?

SURGERY.

1. Name three amputations of either the tarsus or ankle joint. Describe each in detail. State advantages and disadvantages of each method.

2. Give differential diagnosis of (*a*) Fracture of shaft of femur; (*b*) Fracture of neck of femur; (*c*) Give treatment of each.

3. Name various diseases which may cause enlargement or tumor of scrotum. Give differential diagnosis of three of these.

4. Differential diagnosis of complete inguinal hernia. Give in detail (*a*) Treatment before operation in strangulated hernia; (*b*) Indications for operation; (*c*) Operation (one method).

5. Appendicitis. (*a*) Origin; (*b*) Variation in location of appendix; (*c*) Diagnosis; (*d*) Danger of disease without operation; (*e*) Indications for operation.

PRINCIPLES OF SURGERY.

1. Describe minutely the formation of an abscess.

2. Give indications for treatment of inflammation.

3. What are the bacteriological causes of suppuration, erysipelas, glanders, charbon, furuncle?

4. Describe union by first intention.

5. How would you treat a lacerated scalp-wound?

6. How would you treat a delayed union of a fracture of the tibia?

7. (*a*) Give histological and clinical differences between sarcoma and carcinoma. (*b*) Contraindications for amputation in cancer of the breast.

8. Differential diagnosis between dislocation of head of humerus, fracture of neck of humerus, fracture of neck of scapula and severe contusion of shoulder.

9. (*a*) What is the Hunterian method of treating aneurisms? (*b*) What its advantages?

10. Give indications for resection of knee joint and describe the operation.

OBSTETRICS.

1. Give the diameters of the pelvis and of the fœtal head.

2. What are the signs of pregnancy: (*a*) positive; (*b*) probable.

3. Give the causes of abortion and treatment when threatened and when inevitable.

4. If called to a labor case what articles would you take with you?

5. What is the medium of delivery in the L. O. N. position?

6. What would be your management of a breech case throughout?

7. Describe the methods of diagnosing a contracted pelvis and mention the most common variety of deformity.

8. What are the indications for (*a*) forceps; (*b*) podalic version; (*c*) craniotomy?

9. What are the dangers of (*a*) version; (*b*) forceps operations?

GYNECOLOGY.

1. Describe, briefly, the organs of generation in the female.

2. What is the normal position of the uterus and to what extent may its position vary within physiological limits?

3. How would you prepare a patient for examination under Anaesthesia and what are the advantages of such an examination, and what precautions must be observed?

4. What are the different forms of Endometritis and what are the causes, symptoms and treatment?

5. What is Prolapsus of the uterus, its symptoms and treatment?

6. What are the different forms of Genital Fistulae, the causes and treatment?

7. What is the Haematometra, Pyometra, Physometra?

8. Define Leucorrhoea, Dysmenorrhoea, Amenorrhoea.

9. What is a retroflexion and retroversion of the uterus? Give etiology and symptoms.

10. What is a pyosalpinx? A hematosalpinx?

11. Give the chief etiologic factors in a pyosalpinx.

12. Describe in detail extra-uterine pregnancy.

13. How would you treat a case of ruptured tubal pregnancy?

14. How would you differentiate between a retroflexion and a small fibroid in the posterior wall of the uterus?

15. What are the symptoms of malignant disease of the uterus and what treatment is to be carried out? How is it differentiated from a myoma of the uterus?

16. How would you make a diagnosis of carcinoma of the cervix?

OPHTHALMOLOGY.

1. Give the anatomical structures of the eye in order from before backward.

2. Name the varieties of conjunctivitis. Give symptoms and treatment of acute purulent ophthalmia.

3. Give the causes, symptoms and treatment of iritis.

4. Name the varieties of glaucoma, with symptoms and proper treatment. Give the differential diagnosis between glaucoma and iritis.

5. Give the causes, symptoms and treatment of convergent strabismus.

PREVENTIVE MEDICINE.

1. What is an infectious disease?

2. What is the difference between an epidemic and endemic form of disease?

3. Name the dangerous infectious diseases which have a tendency to become epidemic?

4. Give the known methods and channels by which diphtheria is spread?

5. Give in detail what measures you would enforce to prevent the spread of scarlet fever.

SKIN DISEASES.

1. Give etiology and varieties of trichophytosis.

2. Give differential diagnosis between psoriasis and squamous syphilide.

3. Give pathology and treatment of acne vulgaris.

4. Define eczema, give main varieties and treatment of each.

5. What is alopecia areata. Give etiology, prognosis and treatment.

GENITO-URINARY DISEASES.

1. Mention the main varieties of urethritis, give pathology and treatment of each.

2. Give differential diagnosis between enlarged prostate and calculus of the bladder.

3. Give etiology and treatment of epididymitis.

4. What is balanitis, and how would you treat it.

5. Mention varieties of stricture in the male urethra and treatment.

EXAMINATIONS, 1897-98.

FIRST YEAR CLASS.

Histology.—Regular examination, Friday, January 28th, 1898.
Supplementary examination, Friday, May 6th.

Physiology.—Practical examination, Saturday, May 7th.
Written and oral, Monday, May 9th.
Oral, Tuesday, May 10th.

Physics.—Monday, January 17th.

Osteology.—Tuesday, May 3d.

Chemistry.—Monday, May 2d.

Biology.—Monday, May 16th.

Bacteriology.—Thursday, May 5th.

Materia Medica.—Wednesday, May 4th.

SECOND YEAR CLASS.

Physiology.—Practical examination, Wednesday, May 11th.
Written and oral, Friday, May 13th.
Oral, Saturday, May 14th.

Hygiene.—Tuesday, May 3d.

Anatomy.—Wednesday, May 4th.

Chemistry.—Monday, May 2d.

Pathological Histology.—Friday, May 6th.

Physical Diagnosis.—Saturday, May 7th.

THIRD YEAR CLASS.

Gross Pathology.—Wednesday, May 11th.

Medicine.—Thursday, May 12th.

Physical Diagnosis.—Friday, May 13th.

Surgery.—Friday, May 13th.

Obstetrics.—Monday, May 16th.

Therapeutics.—Tuesday, May 17th.

Pediatrics.—Wednesday, May 18th.

Genito-Urinary.—Friday, May 20th.

Dermatology.—Friday, May 20th.

Nervous Diseases.—Wednesday, May 18th.

Gynecology.—Wednesday, May 18th.

Ophthalmology.—Thursday, May 19th.

Preventive Medicine.—Thursday, May 19th.

Jurisprudence.—Monday, May 9th.

Nose, Ear and Throat.—Tuesday, May 10th.

EXAMINATIONS, 1898-99.

FIRST YEAR CLASS.

Physics.—Monday, January 23d, 1899.

Histology.—Friday, February 10th, 1899.
(Supplementary)—Friday, May 26th.

Osteology.—Tuesday, May 23d.

Pharmacy.—Friday, May 26th.

Biology.—Monday, May 29th.

Chemistry.—Thursday, June 1st.

Bacteriology.—Tuesday, June 6th.

Materia Medica.—Thursday, June 8th.

SECOND YEAR CLASS.

Pathological Histology.—Monday, February 13th.

Anatomy.—Wednesday, May 24th.

Physiology.—Practical, examination, Wednesday, May 31st, 1899.
Written and oral, Friday, June 2d.
Oral, Saturday, June 3d.

Hygiene.—Tuesday, June 6th.

Minor Surgery.—Thursday, June 8th.

Therapeutics.—Friday, June 9th.

THIRD YEAR CLASS.

Therapeutics.—Monday, May 29th.

Diseases of Children.—Wednesday, May 31st.

Pharmacology.—Thursday, June 1st.

Genito-Urinary Diseases.—Friday, June 2d.

Obstetrics.—Monday, June 5th.

Physical Diagnosis.—Tuesday, June 6th.

Medicine.—Wednesday, June 7th.

Gross Pathology.—Thursday, June 8th.

Surgery.—Friday, June 9th.

Gynecology.—Saturday, June 10th.

Diseases of Nose, Ear and Throat.—Monday, June 12th.

Applied Anatomy.—Tuesday, June 13th.

FOURTH YEAR CLASS.

Gross Pathology.—Monday, May 22d.

(*a*) *Medicine.*—Tuesday, May 23d.

(*a*) *Surgery.*—Wednesday, May 24th.

Physical Diagnosis.—Thursday, May 25th.

Obstetrics.—Friday, May 26th.

(*a*) *Gynecology.*—Saturday, May 27th.

Neurology.—Monday, May 29th.

(*b*) *Gynecology.*—Wednesday, May 31st.

(*b*) *Medicine.*—Thursday, June 1st.

(*b*) *Surgery.*—Friday, June 2d.

Dermatology.—Monday June 5th.

Jurisprudence.—Tuesday, June 6th.

Ophthalmology.—Wednesday, June 7th.

Preventive Medicine.—Thursday, June 8th.

(*a*) Drs. Bunts, Sawyer, Robb.

(*b*) Drs. Allen, Lowman, Humiston.

GRADUATES, 1896-97.

Bacon, Herbert,
Bowman, Gail G.,
Browning, Charles H., A. B.,
Cassidy, Thomas K.,
Droege, Robert C.,
Ebersole, William G., D. D. S.,
Emery, William T.,
Fought, Chester L.,
Gans, Daniel W., B. L.,
Griffiths, Thomas F.,
Gunsolly, William N.,
Hain, C. Oliver, Ph. G.,
Herrick, Frederick A. B ,
Kerr, John W.,
Kidd, William A.,
Lang, Charles G.,
Lawrence, Jacob G.,
Marquette, Charles J.,
Maxwell, Charles F.,
McCarty, Isaac T.,
McGarvey, Harry,
Miller, Albert C.,
Okamoto, Tashiyuki Rev.,
Pope, Carlyle,
Race, Charles W.,
Reynolds, Robert D., A. B.,
Smead, Herbert E.,
Tierney, John S.,
Warner, Otto N.,
White, Robert W.,

MEDICAL COLLEGE.

STUDENTS, 1897-98.

THIRD YEAR.

Beebe, Pearl A.....Cleveland.
Bishop, Hal F..... ..... Cleveland.
Carlisle, Chester L .....Marion.
Black, Jotham F .....Springfield, Mass.
Cozad, Henry Irving, A. B.....Akron.
Crowell, Wilbur S .Traverse City, Mich.
Cudell, Adolph ....Cleveland.
Culp, Clyde S ....Richmond.
Dial, Emory L., A. B .....Cleveland.
Dickerson, Egbert S ....Cleveland.
Doolittle, William F.....Cleveland.
Eddy, Roy C.....Cleveland.
Goodman, Guy T .....Mansfield.
Hall, H. Melville .....Wheeling, W. Va.
Hard, Harrie E ....Medina.
Heidler, George K.....McCleary, Pa.
Heinig, Emil J ....Millersburg.
Held, Charles E .....Cleveland.
Hill, Corwin T..... .....Cleveland.
Hobson, Willis S., A. B.....Lakewood.
Hoffman, Gideon H .....Harlan, Ind.
Hole, Charles M .....Salem.
Jaster, Cyrus ..... Cleveland.
Liles, Lester McKisson,.....Collins.
Little, J. Melvin.....Dallas, W. Va.
†Lehman, F. J. J., M. D.Los Angeles, Cal.
Lucke, Ernest H .....Cleveland.
Manchester, William C .....Canton.
McComb, Edwin C.....New Castle, Pa.
Merriam, Walter H., Ph. B., M. D., Cleveland.
Mitchel, Gustav H.....Cleveland.
Norrel, John W.. .. ... Frankfort, Ky.
Osborn, William O., M. D....Cleveland.
Phillips, William W., A. B..,.Clark, Pa.
Powell, Otho J., B. S.....Ashland.
Rhu, Herman S .....Marion.
Rummel, Edwin G..... .....Lucas.
Schmoldt, Frederick J .....Cleveland.
Season, Edwin H .....Metz.
Seids, John W ....Bryan.
Simpson, Andrew J .....Cleveland.
Stern, Walter G., A. B.....Cleveland.
Sunkle, Robert H., A. M.....Mt. Hope.
Taylor, Arthur C..... .East Cleveland.
Tetlow, Herbert, A. B ...Westerly, R. I.
Thomas, William J ..South Wales, Eng.
Tidd, Charles C ....Clark, Pa.
Wood, William H .....Nettle Lake.
Woolgar, William J. W.....Cleveland.

†Special Course.

SECOND YEAR.

Banker, David F .....Canton.
Beale, G. Edward... ...Marshall, Wis.
Bell, Clinton H .....Cleveland.
Bunce, Horace E., Jr., B. S...Cleveland.
Chamberlin, William B., A. B...Shelby.
Clisby, G. C., A. B.....Gustavus.
Cowley, Robert H., A. M.....Lorain.
Craig, Chalmers ....Cleveland.
Cunningham, A. T. R., A. B..Cleveland.
Darby, John C., A. B .....Cleveland.
Drechsler, William.....Cleveland.
Dunn, John J.....Cleveland.
Eberhard, LeRoy C., A. B.... ...Akron.
Gill, William C., A. B .....Cleveland.
Gillam, Arthur C., Ph. B. ... .Wooster.
Green, William L.....Memphis, Ind.
Hannum, B. G ....Toledo.
Harding, George W., A. B ...Cleveland.
Henderson, George D., Jr....Cleveland.
Houck, Eugene O ....Cleveland.
Ickes, Edgar M., B. L..... ... Fremont.
Jenkins, Henry E ....Cleveland.
Jennings, Curtis H...Springfield, Mass.
Jones, Sidney, A. B.....Cleveland.
Knowlton, Louis G.....Cleveland.
Lynn, Frederick M.....Cortland.
Lyon, William D. .....Cleveland.
McElhany, B. B .....Cleveland.
Marsh, Van N., Ph. B.....Alliance.
Medlin, Wenzel A.....Cleveland.
Metz, Roy B ..... Cleveland.
Miller, Howard C.... .....Youngstown.
Peskind, Samuel .....Cleveland.
Phillips, William H., A. B. Greenville, Pa.
Root, Ralph ....Kinsman.
Simpson, Ferdinand H..... Akron.
Spreng, William.....Cleveland.
Suchy, F. H..... .....Cleveland.
Tucker, John D..... New Castle, Pa.
Webb, Frank R.....Massillon.
Weeks, Edmund A..... Akron.
Wheelock, Lincoln A.....Cleveland.
Williams, Chas. D., Ph.G..Goodrich, Ont.
Williams, William H. .....Cleveland.
Yü, Z. T. Robert.....Shanghai, China.

FIRST YEAR.

Akins, Earl E.....Cleveland.
Austin, George S.....Painesville.
Baldwin, William S .....Cleveland.
Beckerman, N. C.. .....Cleveland.
Berry, W. W.....Springfield, Mass.
Brown, Arthur E.....Greenville, Pa.
Cadwalader, John S.....Warren.
Carlisle, Paul P .....Mt. Gilead.
Clark, William T.....Jamestown, Pa.
Cline, Austin W.... ..Hawleyton, N. Y.
Daugherty, John Edward.....Akron.
Dickinson, John, Jr .....Cleveland.
Englander, Simon.....Cleveland.
Graver, Joseph G.....Cleveland.
Hay, Charles H ....Seville.
Hoover, Charles S ....Alliance.
Ickert, Frank H.... ... East Liverpool.
Jones, Oliver C... ....Martel.
Mabry, W. C., A. B .....Cleveland.
Maska, J. E.....Cleveland.
McConnell, J. T . .....Cleveland.
McIlrath, Wade..... .. .Cleveland.
Metz, L. Arthur.....East Liverpool.
Morehead, B. O.....Mansfield.
Peppard, D. W.....Crestline.
Richardson, William H.....Lisbon.
Stackpole, Robert L.....Venango, Pa.
Stall, Arthur H.....Barberton.
Stamp, Harley.....Cleveland.
Vasey, Charles F.....Salineville.
Wean, Clarence B. .. .. Cleveland.
Young, H. Alfred, A. M..... Cleveland.
Zintsmaster, Logan B ....Navarre.

ALUMNI ASSOCIATION.

The annual meeting of the Alumni Association will be held Wednesday, May 18th, 1898, at 2 o'clock P. M., in the College building.

A. M. SHERMAN, M. D., *President.*

G. C. ASHMUN, M. D., *Secretary.*

Dental Department.

CALENDAR.

1898.		
3 Jan.	Monday	Exercises resumed.
22 Feb.	Tuesday	Washington's Birthday. No lectures.
2 May	Monday	Examinations begin.
17 May	Tuesday	Annual Alumni Association Meeting, at 2 p. m. College Amphitheatre.
17 May	Tuesday	COMMENCEMENT, 8 p. m.

SUMMER VACATION.

4 Oct.	Tuesday	Session opens.
		Examinations for admission from 10 a. m. to 2 p. m. Opening exercises at 2 p. m.
24 Nov.	Thursday	Thanksgiving Day. No lectures.
23 Dec.	Thursday	Holiday recess begins.
1899.		
4 Jan.	Wednesday	Exercises resumed.
		Washington's Birthday. No lectures.
1 June		Examinations begin.
14 June	Wednesday	Annual Alumni Meeting, at 2 p. m. College Amphitheatre.
15 June	Thursday	COMMENCEMENT, 10:30 a. m.

Western Reserve University.

WESTERN RESERVE UNIVERSITY is one of the oldest and one of the newest institutions of learning. Its oldest department was founded in 1826, its newest in 1892. It was organized as a university in 1884, and consists of six departments.

These departments are:

Adelbert College, established 1826
The Medical College, established 1843
The College for Women, established 1888
The Dental College, established 1892
The Law College, established 1892
The Graduate College, established 1892

The dental department of Western Reserve University was organized by the trustees and medical faculty of the University in the belief that dental surgery should be regarded as a branch of medicine, and with the purpose of training students to practice it as a medical specialty.

The college is under the control of the University trustees, and is thus in every sense a part of the University. Its professors do not control the fees from students, nor do they accept fees for extra courses.

The college is a member of the National Association of Dental Faculties, the National Association of Dental Examiners, the National School of Dental Technics, and conforms to all the rules of these associations.

Students in the dental college are allowed to elect without charge such courses of instruction in Adelbert College and the Graduate School as they are fitted to pursue. They are at liberty to make use of the Adelbert Library and of the Cleveland Public Library, which is located near the school. Through the proper channels they can also gain access to Case Library, likewise situated near the school.

THE NEW BUILDING.

When the College of Dentistry was established in 1892, rooms were assigned to it in the building erected by Mr. John L. Woods for the Medical School; but the work in both dentistry and medicine has been so much extended and the number of students in each department has so rapidly increased, that the Trustees of the University have provided separate accommodations for the dental school in the new and handsome Bangor Building, situated next to the Young Men's Christian Association's building, on Prospect street. Already two sessions have been held in the new building, and have proved its facilities to be excellent. Each room has perfect light and ventilation. The laboratories, one for the Freshmen and one for the Juniors, with an adjoining room for both classes, are arranged for an advanced system of teaching. Each room contains a complete laboratory equipment. Many tools and instruments are provided for the students and without charge. The operating room contains forty chairs and is fully equipped. The surgical and extracting room contains a standing amphitheatre.

The building has been planned to accommodate one hundred and fifty students. When this number is reached, admission

to the Freshman class will be by a suitable method of competition. It is advisable that students matriculate early.

Attention is also directed to the fact that hereafter there will be no extra fees except as hereinafter indicated, but that the general fee will cover the expense of dissection, chemistry, histology, physiology, and bacteriology.

The new building is situated near the Medical School, where dental students will continue to be instructed in several branches of medicine with the medical classes; and, like the Medical School, it is located in the heart of the city. This situation insures a large amount of clinical material. The Young Men's Christian Association in the adjoining building gives to dental students special rates of membership, admitting them to their lectures, classes, gymnasium, baths and other privileges. Excellent boarding houses are to be found in the neighborhood.

FACULTY.

CHARLES FRANKLIN THWING, D. D., LL. D.,
President. 55 Bellflower Av.

HENRY LOVEJOY AMBLER, M. S., D. D. S., M. D., DEAN,
Professor of Operative Dentistry and Hygiene. 176 Euclid Av.

WILL HENRY WHITSLAR, M. D., D. D. S., SECRETARY,
Professor of Dental Anatomy and Pathology. 29 Euclid Av.

GEORGE HENRY WILSON, D. D. S.,
Professor of Prosthesis and Metallurgy. 44 Euclid Av.

JOHN WILLIAM VAN DOORN, D. D. S.,
Professor of Dental Medicine. 455 The Arcade.

JOHN FRANKLIN STEPHAN, D. D. S.,
Professor of Operative Technics. 29 Euclid Av.

CALVIN SUVERILL CASE, M. D., D. D. S.,
Professor of Orthodontia. Chicago, Ill.

GEORGE NEIL STEWART. M. A., D. Sc., M. D., D. P. H.,
Professor of Physiology and Histology. Medical College.

CARL A. HAMANN, M. D.,
Professor of Anatomy. 282 Prospect St.

PERRY L. HOBBS, PH. D.,
Professor of Chemistry. Medical College.

WILLIAM TRAVIS HOWARD, A. B., M. D.,
Professor of Bacteriology. Medical College.

LOUIS PRENTISS BETHEL, M. D., D. D. S.,
Assistant in Bacteriology. Kent, O.

JOHN RALPH OWENS, D. D. S.,
Anaesthetics. New England Building.

HARRY AUGUSTUS GARFIELD,
Dental Jurisprudence. Garfield Building.

CHARLES EMRY HURD, D. D. S.,
Demonstrator. 143 Euclid Av.

WILLIAM GEORGE EBERSOLE, M. D., D. D. S.,
Demonstrator. 176 Euclid Av.

WESTON A. VALLEAU PRICE, D. D. S., M. E.,
Electro-therapeutics and Dental Electric Appliances.
2238 Euclid Av.

FRED FAYETTE CHAPMAN,
Curator of Museum.

PROFESSOR WHITSLAR,
Superintendent of Operative Clinics.

PROFESSOR WILSON,
Superintendent of Prosthetic Clinics.

MISS KITTIE G. FRANKLE,
Clerk of the Clinic.

STUDENTS OF 1897-8.

SENIOR CLASS.

		(Cleveland Address.)
George Dennis Allison	*Akron*	13 Payne Av.
Arthur Dick Apple	*Meadville, Pa.*	119 Huron St.
Fred Fayette Chapman	*Chardon*	483 Pearl St.
Foster Oran Dudgeon	*Cleveland*	98 Chestnut St.
Charles Surfestus Draime	*Canton*	701 Superior St.
Calvin Riley Edson	*Cleveland*	Miles Av.
Charles Drawn Elder	*Johnsonville*	119 Huron St.
Isidor Englander	*Cleveland*	155 Greenwood St.
Albert Carl Fisher	*Youngstown*	195 Dodge St.
William Woods Gillen	*Youngstown*	701 Superior St.
Penrose Thomas Haight	*Guy's Mills, Pa.*	136 Muirson St.
Samuel William Hatch	*Geauga*	106 Euclid Av.
George Eells Hervey	*Edinboro, Pa.*	176 Euclid Av.
Thomas Bertell Johnson	*Cleveland*	106 Euclid Av.
Harry Edmund Keck	*Akron*	13 Payne Av.
Edward Raymond Kelley	*Ashtabula*	162 Dodge St.
Jay Carleton Kelley	*Geneva*	57 Sibley St.
Herman Clifford Kenyon	*Medina*	260 Woodland Av.
Percy Ellis Maddock	*Elyria*	57 Gale Av.
Frank R. Mathews	*Salem*	49 Rutledge St.
Joseph Worrell McDill	*Burlington, Ia.*	1615 Broadway.
John Allen McGannon	*Geneva*	157 Dodge St.
Francis Joseph McGannon	*Geneva*	157 Dodge St.
Frank Edgar Noland	*Big Plain*	701 Superior St.
Everett Eugene Quirk	*Jackson, Mich.*	119 Huron St.
John Babcock Reeves	*Orwell*	139 Chestnut St.
Oliver William Renkert	*Canton*	701 Superior St.
Edward Burton Rogers	*Wilkes Barre, Pa.*	25 Calvert St.
James Frank Rybak	*Cleveland*	1371 Broadway.
Park Eugene Sprague	*Huron*	57 Sibley St.
Robert Harrison Wallace	*Kinsman*	139 Chestnut St.
Leon Clark Vincent, Ph. B. Hiram College.	*Hiram*	172 Chestnut St.

JUNIOR CLASS.

Ross Willis Andrews	*Scroggsfield*	1254 Cedar Av.
Almon Lee Atwater	*Kingsville*	70 Brownell St.
Liscom Dalzell Auxter	*Oak Harbor*	135 Chestnut St.
Homer Aaron Baldwin	*Guy's Mills, Pa.*	136 Muirson St.
Varney Edward Barnes	*Cleveland*	Logan Av.
Richard Emile Currie	*Duke Centre, Pa.*	337 Prospect St.
Harry Poe Eaby	*Wooster*	109 Chestnut St.
Leigh Lawrence Finch	*Richford, N. Y.*	195 Dodge St.
Emanuel Grossman	*Cleveland*	Superior, Cor. Alabama St.
Frank Joseph Gunn	*Cleveland*	785 Superior St.
*James Francis Kelley, M. D.	*Cleveland*	
Paul Rollen Lehmann	*Savannah*	163 Dodge St.
John Mistr	*Begonia, Va.*	63 McBride St.
Charles Creighton Mottinger	*Inland*	167 Chestnut St.
Edwin Lee Norton	*Madison*	339 Prospect St.
James Alfred Rupert	*Sandy Lake, Pa.*	137 Chestnut St.
Frank Watson Stevenson	*Cleveland*	1437 Woodland Av.
Cameron Robertson Stewart	*Toronto, Can.*	236 Arcade.
Charles Edward Taylor	*Kirkton, Ont.*	337 Prospect St.
Oscar John Van Dorsten	*Navarre*	172 Chestnut St.
Samuel Marshall Weaver	*Ravenna*	172 Chestnut St.
John Barton Webber	*Medina*	172 Chestnut St.
Charles Nelson White	*Cleveland*	153 Cedar Av.
Douglas Austin Wright	*Huron*	219 Waring St.
Dan Hendrix Ziegler	*Philadelphia, Pa.*	1956 Superior St.

FRESHMAN CLASS.

Franklin Bishop	*Cleveland*	90 Jennings Av.
Roland Gerald Borland	*New Vernon, Pa.*	137 Chestnut St.
Francis Oliver Boston	*Alliance*	138 Dodge St.
John Deveny Bunn	*Salineville*	127 Chestnut St.
Leon Dallas Boylan	*Niles*	13 Grant St.
Ansley Stewart Canon, Jr.	*Coulson, Pa.*	156 Oregon St.
William Henry Carroll	*Cleveland*	1282 Woodland Av.
Harold Mather Clapp	*Kent*	56 Chestnut St.
Homer Clyde Darrah	*St. Clairsville*	135 Chestnut St.
William Frederick Diffenbacher	*Redlands, Cal.*	23 Freeman St.
James Thomas Doyle	*Cleveland*	953 Cedar Av.
Earle Booth Duffy	*Taunton, Mass.*	310 Cedar Av.
James Lawrence Dusek	*Cleveland*	123 Humbolt St.
Frederick George Eggert	*Cleveland*	862 Lorain St.
Frank Bascom Elder	*Johnsonville*	119 Huron St.
Gustave Theodor Fuenfstueck	*Cleveland*	21 Wendell St.
Frederick Russell Grau	*New Orleans, La.*	Lincoln Hotel.
Peter Anthony Haas	*Cleveland*	1420 Lorain St.
William Clayton Hall	*Lorain*	149 Chestnut St.
Thomas Jefferson Jones	*Pomeroy*	180½ Prospect St.
*Samara Kuboto	*Tokio, Japan*	29 Euclid Av.
Richard Henry Lindhurst	*Cleveland*	692 Clark Av.
William Arthur Morris	*Perth, Ont., Can.*	163 Dodge St.
William Abner Nichols	*Medina*	22 Wilbur St.
Albert Otis Osborne	*North Jackson*	584 W. Madison Av.
Arthur Claude Peebles	*North Sheffield*	70 Brownell St.
Arthur Leon Porter	*Meadville, Pa.*	119 Huron St.
Otto John Schneider	*Canton*	1868 Euclid Av.
Clyde Lee Smith	*Blooming Valley, Pa.*	136 Muirson St.
*William Alberto Spoull	*Plain Grove, Pa.*	
Allen Eugene Stroud	*Sandusky*	138 Dodge St.
Williard Bradford Tiffany	*Clyde*	149 Chestnut St.
Theodore Halsey Terry	*Cleveland*	85-87 Euclid Av.
James Fred Wark	*Mansfield*	45 Herrick St.

*Attended part of session.

GRADUATES IN 1897.

The Degree of Doctor of Dental Surgery was conferred on the following:

FRED SAMPSON ANDERSON,
LYMAN SPENCER ARMSTRONG,
CLAYTON ROYAL BALDWIN,
MORLEY JAMES BEAL,
WILLIAM LIVINGSTON BEAL,
CARL FOSTER BLAIR,
WILLIAM DUDLEY BOLTON,
LUTHER LAWRENCE BOSWORTH,
CLARENCE WILSON DAVIS,
WILLIAM RODELL DIXON,
DEXTER HENRY FAIRBANKS,
CHARLES ANDREW FINK,
ELLASON FRANCIS GROSE,
ARTHUR LA FAYETTE HIGGINS,
WILLIAM CHESTER HONEYWELL,
HARRY MILTON KING, A. B.,
(Western University, Pennsylvania.)
FRED LESLIE LUDWICK,
WILLIAM MERTON MEGGINSON,
FREDERICK LA VALLE MILES,
WILLIS HUNTLEY MOYER,
FRANK ALOY MORAN,
MARTIN HENRY MORRISON,
JOHN AUGUSTUS OSBORNE,
REUBEN WILSON PARKER,
AUBREY LEARD PARSONS,
M. CURTIS RAMALEY,
WILLIAM FOLWELL SPARGUR,
WILLIAM JACOB STEPHAN,
WALTER PAUL SMITH,
BURT EDWARD SAUNDERS,
CHARLES FREDERICK WALLACE,
FRANK LEVY WEST.

ADMISSION.

Each candidate must be at least eighteen years of age, and furnish to the secretary at the time of matriculating a certificate of good moral habits. A blank form will be found at the end of this catalogue.

The rules for admission and graduation are such as obtain in the National Association of Dental Faculties of which this college is a member.

Applicants will be subject to an examination in the common English studies unless satisfactory evidence is presented to the effect that they have received a good education in these studies. A diploma or certificate from a normal or high school, a teacher's certificate, a collegiate degree, matriculation at a recognized college, is received as evidence of fitness to enter upon the study of dentistry.

ADMISSION TO ADVANCED STANDING.

Students will be admitted to the course of the second year who present certificates from recognized dental colleges of attendance upon one full course of lectures of at least six months, and who give evidence satisfactory to the heads of the respective departments that they have a good knowledge of the work of the first year.

Graduates of reputable medical colleges will be admitted to the work of the second year and will be excused from lectures and examinations upon general anatomy, chemistry, histology, physiology, pathology, materia medica and therapeutics, but will be required to take the courses in operative and prosthetic technics, special pathology, special histology, dental materia medica, therapeutics and bacteriology.

Applicants for admission to advanced standing from foreign countries are required to furnish properly attested evidence of

study, and attendance upon lectures, such as is required of other applicants, and they must pass the intermediate examinations.

Students from recognized dental schools can enter the senior class only upon evidence of having completed work equivalent to that of the first and second year in this school.

Applications for admission can be sent at any time to the Secretary, Dr. W. H. Whitslar, 29 Euclid avenue, who will cheerfully answer any inquiries about the school. As chairs in the operating room and places in the laboratory are selected in the order of matriculation and payment of fees, it is advisable that students should have their names registered as early as possible.

TERMS.

The course of study extends over three sessions of thirty-six weeks each, including the Christmas recess. The session for 1898-99 begins Tuesday, October 4th, and closes June 15th.

According to a rule of the National Association of Dental Faculties credit for a full term cannot be given to students who enter more than *ten* days after the opening of the session. But if any student is prevented by sickness from entering within the ten days, and if his sickness is properly certified to by a reputable practicing physician, he can enter not later than twenty days from the opening day.

COURSE OF STUDY.

The following table shows the work required in each year and the number of hours a week in each subject.

FIRST YEAR.

	HOURS PER WEEK.
Osteology	2.
Chemistry	4—lectures. 4—laboratory.
Prosthesis	1—lecture. 15—laboratory.
Histology	4—16 weeks.
Dental Anatomy	4—after Christmas.

SECOND YEAR.

Anatomy—Descriptive	4.
Physiology	2—lectures or demonstrations.
Dental Histology and Embryology	1—to Christmas.
Metallurgy	1.
Operative Technics	4—before Christmas.
Crown and Bridge Work and Orthodontia Technics	15—4 months.
Clinical Dentistry	15—4 months.
Dissection	Evenings.
Dental Pathology	1—After Christmas.

THIRD YEAR.

Operative Dentistry	2—4 months. 3—4 "
Operative Clinics	15.
Pathology, Dental and General	1.
Dental Medicine	1.
Bacteriology	9—8 weeks.
Surgical Clinics	6.
Orthodontia	Special lectures.
Anaesthetics	" "
Jurisprudence	" "
Dental Hygiene	" "
Special Chemistry	" "
Electro-therapeutics	" "

METHODS OF INSTRUCTION.

The methods of instruction consist of lectures, recitations, demonstrations, clinics, and practical work in the chemical, physiological and bacteriological laboratories. Complete courses are given in the technic of operative and prosthetic dentistry, as well as in orthodontia and steel.

A new method of instruction in prosthesis has been introduced which is believed to be superior to that heretofore followed.

Clinical material is abundant and a vast variety of cases are presented.

Anatomy, chemistry, physiology and histology are pursued in the medical department. With the general work in these subjects special instruction for dental students is interwoven.

The clinical professors of this school give their entire time during the clinic hours to instruction each day throughout the term. It will be seen that this method gives each student constant *personal attention* by skilled teachers and operators. All practical work must be performed in the college, and every effort is made to prevent students from practicing dentistry illegally.

Regular attendance at all of the lessons of instruction and clinics is required. No student will be excused from the technic or practical courses.

DESCRIPTION OF COURSES.

ANATOMY.

The course in anatomy consists of lectures upon descriptive and applied anatomy, together with demonstrations and recitations. In accordance with the needs of dental students especial attention is given to the anatomy of the head, neck and alimentary canal.

In order to facilitate the work in osteology, students of the first year are provided with separate bones, which they are permitted to take home for purposes of study.

For demonstrations upon the cadaver and anatomical preparations, the second-year class is divided into sections, in order that individual students may have every opportunity of becoming familiar with the various parts of the body, and of receiving direct personal instruction. Text-books: Gray's Anatomy and Black's Dental Anatomy.

PRACTICAL ANATOMY.

The advantages offered for the study of practical anatomy are very rich. The anatomical room is well lighted, perfectly heated and ventilated. It has twenty-four tables, and is furnished with hot and cold water, elevator aud every convenience for successfully conducting the work of dissection.

Dissections are made under the immediate direction of the Professor of anatomy.

PHYSIOLOGY.

Two lectures a week are given to the students of the second year. The lectures are illustrated by experiments in the class-room and demonstrations in the laboratory.

The properties of the circulating liquids of the body, blood and lymph, having been first described, the mechanical and physiological factors concerned in the maintenance of the circulation are studied in detail. The physical and chemical phenomena of respiration and the relation of the nervous system to the respiratory mechanism are next taken up. Then follows an account of digestion, including the secretion of the digestive juices and their action on the food substances, the movements of the stomach and intestines, and the influence of nerves on the functions of the alimentary canal. The absorption of the digested food into the blood-vessels and lacteals, the changes which the absorbed substances undergo in the body, and the channels by which the waste products are excreted form the next division of the subject. A general view is then taken of the statistics of nutrition and metabolism (including Animal Heat), from which the rules governing the construction of dietaries are deduced. The general physiology of muscular and nervous tissue having been treated of, the physiological anatomy and functions of the brain and spinal cord are described at length. A brief account of reproduction and development completes the course.

Care is taken to emphasize the special importance to the dental student of such subjects as the secretion of saliva, the formation of tartar and salivary concretions, and the mechanism of mastication and of articulation.

Text-book: Stewart's Manual of Physiology.

HISTOLOGY.

The course is the same as for the medical students, but special stress is laid upon the structure of bone, tooth, the salivary glands and the contents of the mouth in general.

Each student spends more than sixty hours in the laboratory, and mounts, stains and studies about one hundred sections of all the important organs and tissues. Microscopic slides and materials cost each student about three dollars, but they remain his own property.

Text-book: Stohr's Histology.

CHEMISTRY.

Much care and attention have been devoted to the thorough arrangement and equipment of the chemical laboratory and lecture room according to modern plans.

The course includes a series of illustrative lectures on inorganic and organic chemistry, showing their relationship to dental, medical and sanitary science, and laboratory practice. The latter offers the student advantages in acquiring chemical manipulations and favors his acquaintance with the principles of chemistry. Four hours a week throughout the year are given to the work.

Special or advanced students will also be furnished the means for original work or research, under the guidance of the instructor. A special course is provided for the third year students—which deals especially with the chemistry of the mouth.

Text-books: Witthaus' Chemistry, Mitchell's Dental Chemistry for reference.

PATHOLOGY.

This course covers a description of general and special pathology. It consists of an investigation of the principles of pathological processes, their histological changes and effects upon the organism. Surgical pathology is elucidated and the general subject treated so as to prepare for the study of dental pathology. The decay of teeth, and inflammations of the

dental pulp and pericementum receive special attention. Tumors of the mouth and teeth, and diseases of the mouth, including syphilis, are also discussed.

The professor in charge of this department, having personal supervision of the clinics, has numerous opportunities to illustrate by practical demonstrations the various subjects of his lectures.

Text-books: Marshall's Injuries and Surgical Diseases of the Face, Mouth and Jaws.

BACTERIOLOGY.

The course in this department embraces both general and special bacteriology. The student is taught, by actual practice in the laboratory, the general technique of bacteriological diagnosis and research, dealing first with the non-pathogenic germs, to familiarize himself with the work, then taking up, for study, the micro-organisms of pus, etc., and later the various bacteria of the mouth, the special bacteria of decay and other pathological conditions of the teeth and associated parts. The work is entirely practical, supplemented at appropriate times with lectures, demonstrations and quizzes by the professors in charge.

Text-books: Abbott's Bacteriology, Miller's Micro-Organisms of the Mouth.

MATERIA MEDICA AND THERAPEUTICS.

An intelligent knowledge of the properties and application of medicaments is so important that dental students should be as well grounded in this as in anatomy and physiology. The course consists of a series of comprehensive lectures upon all important drugs, with especial illustrations of their use in dentistry.

The aim is to make these lectures of great practical value; and the methods of administration and application are described in detail.

Text-books: Georgas' Dental Medicine.

PROSTHESIS AND METALLURGY.

There are two dental laboratory class-rooms, one for students of the first, and one for those of the second year, each room is provided with sixty benches and with a platform furnished with complete laboratory appliances. There is also a dental laboratory with lathes, plaster, molding and casting, for all coarse work, and a specially fitted forge room. Every effort is made to have the methods of instruction as practical as possible; thus in vulcanite technic work each student takes the impression and articulation from the mouth of a person employed for the purpose, rather than from a model, and all clinical patients in this department are treated upon the platform before the class.

Comprehensive and progressive technic courses are given in impressions—vulcanite, celluloid, cast metal, aluminum, gold, continuous gum (optional), and in their combinations, in crown and bridge work, steel, orthodontia, and metallurgy.

In addition to the regular scheduled lectures, dealing with the history of the subject and the principles involved, special technic lectures, are given as the class enters upon new work. These lectures are not mentioned in the schedule.

Fifteen hours a week for nearly two years are devoted to this work. The professor in charge of this department devotes his entire time during these hours to personal instruction in the laboratories.

There is a special laboratory for instruction in metallurgy. Text-books: American Text Book, Volume I., Hodgen's Metallurgy.

OPERATIVE DENTISTRY.

In this department the teaching is largely of a clinical character. Having a patient before the class many valuable suggestions can be made most clearly.

A full description of instruments and appliances used in the operating room, and of the various materials in daily use by the practitioner, is given.

Operating chairs in the operating room and benches in the laboratory are assigned in the order of matriculation and payment of fees.

All seniors are required to bring their laboratory instruments with them so as to perform practical cases in prosthesis and bridge work. The necessary instruments are not supplied to students by the college. Each student must provide instruments for use in all departments of his work and he must keep them in good order. Patients are not assigned to him unless this requirement is fulfilled.

It is suggested that those who already have not such instruments defer the purchase until they enter the school, in order to secure uniformity and excellence in outfit.

Instruments, including dental engine, cost about ninety dollars. These are needed after Christmas of the second year.

Text-book: Volume II., American Text Book of Operative Dentistry.

OPERATIVE TECHNICS.

This work is preceded by a thorough study of dental anatomy, and by the cutting on the part of each student of sections of teeth to learn their forms. All students are first taught to operate upon natural teeth out of the mouth, to treat organs supposed to be diseased with therapeutic agents, and to fill cavities with the various appropriate materials.

A study of the materials used in filling, of the proper shaping of cavities, and of the instruments required in each successive step is carefully followed in this course.

The methods are designed not only to lead to a rapid attainment of the high degree of manual dexterity required in the practice of dentistry, but to cultivate as well the power of individual observation and reasoning.

NOTE.—The operations in the technic department require a great number of natural teeth, and as it is difficult to procure a sufficient number, it would be to the interest of every student to obtain as many as possible before he returns for the work of his second year.

ORTHODONTIA.

The course in Orthodontia is commenced in the junior year. It consists of technic work which is used in the third year for practical cases. The course is systematic so as to illustrate the principles of force in their relation to the movement of the teeth and bone tissue when found to be irregular. The head of this department (Professor Calvin S. Case, M. D., D. D. S.,) illustrates his lectures with a large number of models from practical cases in his private collection. The student is thus brought into relation with the best methods of correcting irregularities of the teeth, and he also learns how to make his own appliances for the purpose.

ELECTRICITY.

A thorough course of instruction is given in electro-physics and electro-chemistry, and the practical application of their principles in the processes employed in dentistry. It will include lectures, laboratory experiments and clinical demonstrations.

Cataphoresis will be given special consideration and the various current controllers and milliameters will be studied by the students and thoroughly demonstrated by clinics.

Bleaching teeth by means of electric currents with various agents, treating pyorrhea alveolaris and alveolar abscess, also the use of the X Rays for locating unerupted teeth will be elucidated. The construction and management of electric dental engines and motors and general methods controlling the various kinds of currents will enter into the course, also the galvanic effects and electrolytic products of various filling materials in the mouth, etc. Students should be familiar with the general principles of electricity before commencing the course.

DENTAL MUSEUM AND LIBRARY.

A Dental Museum and Library is being formed. It is earnestly requested of those who have specimens or literature of any interest to dental students, that they make contributions. Each specimen and book will receive proper care, and credit will be given the donor. A fine collection is being acquired.

DEGREE.

The degree of *Doctor of Dental Surgery* is conferred upon all students not under twenty-one years of age, who have satisfactorily completed the required course of study, paid all required fees, passed all examinations, performed such practical operations in the operative and prosthetic departments as may be required, and conformed with such other regulations as the faculty may prescribe.

Candidates who attain a general average of ninety per cent. in all their examinations will receive honorable mention.

The degree of Doctor of Medicine is conferred upon graduates in dentistry after the satisfactory completion of two years' additional work in the medical department. The regular course in the medical department is four years.

Graduates in Dentistry of other institutions are required to attend one full course and comply with all the regulations of the Senior year in order to receive the dental degree from Western Reserve University.

BOOKS OF STUDY.

FIRST YEAR.

Gray's Anatomy,
Stohr's Histology,
Witthaus' Chemistry,
American Text-Book Prosthetic Dentistry,
or Richardson's Mechanical Dentistry.

SECOND YEAR.

Stewart's Physiology,
Hogden's Metallurgy,
Barrett's Oral Pathology,
Black's Dental Anatomy.

THIRD YEAR.

Pathology—Marshall's Injuries and Diseases of Face, Mouth and Jaws.
Georgas' Dental Medicine,
Miller's Micro-organisms of the Mouth,
American Text-Book Operative Dentistry.
Ambler's Tin Foil and its Combinations for Filling Teeth.

BOOKS OF REFERENCE.

Dictionary, Gould or Duane; American System of Dentistry; Garrettson's Oral Surgery; Week's Operative Technics; Evan's Crown and Bridge Work; Mitchell's Dental Chemistry; Meadowcraft's A B C of Electricity.

INSTRUMENTS REQUIRED.

The following list of instruments is required before benches will be assigned. Substitutes not accepted. Purchase at Dental Supply House. Cost under $25.00.

PROSTHETIC DEPARTMENT—FIRST YEAR.

1 (each) Upper Impression Trays, Nos. 2, 4, 12½.
1 " Lower Impression Trays, Nos. 3, 16, 20.
1 Porecelain [preferred] or Rubber Plaster Bowl.
1 Plaster Spatula.
1 Wax Spatula [Haskell's].
1 Bonwill Articulator.
1 Whitney Flask [thin].
1 Double End File [Rubber].
1 Rat-tail File [Rubber].
1 Set of Wilson Scrapers.
1 Mechanical Saw-Frame and Saws.
1 Pair Calipers.
1 Felt Cone.
1 Felt Wheel.
1 Brush Wheel, Converging, No. 23.
1 Brush " Straight, No. 26.
2 Small Corundum Wheels, ½" and 1" Mandrel for Engine.
1 Bunsen Gas Burner and Spider and 18 inches Rubber Tubing.
1 Large-Mouth Blow-Pipe.
1 Pair Shears, Curved.
1 Pair Plate Nippers.
1 Pair Flat-nosed Pliers.
1 Pair Round-nosed Pliers.
1 Pair Solder Tweezers.
1 Pair Contouring Pliers [Wilmington], No. 23.
1 Flat File [Metal] Cut No. 4, 4 in.
1 Half Round File [Metal] Cut No. 2, 4 in.
1 Rat-tail Smooth File [Metal] short.
1 Plate Burnisher, No. 2.
1 Swaging Mallet [Horn].

1 Watt's Metal Flask.
1 Riveting Hammer, No. 4.
1 Anvil [crown and bridge].
1 Box Melotte's Moldine.
1 Spool Binding Wire [small].
1 Whetstone.
1 Piece Ground Glass.
1 Charcoal Block.
3 Pounds Babbitt's Metal [Haskell's].
3 Pounds Counter-die Metal [Haskell's].
½ Pound Lead in bar form.
½ Pound Yellow Wax.
½ Pound Modeling Compound.
¼ Pound Red Rubber.
2 Sheets of Pink Rubber.
1 Book Tin Foil, No. 20.
1 Sheet Tin Foil, No. 60.

NOTE.—Desirable to have but not required:

1 Pair Straight Shears.
1 Plate Punch.
1 Carborundum Wheel, 1½ inch, and Chuck for Redman Lathe.
1 Small Ladle [for low fusing metal].
1 Plaster Knife.

OPERATING INSTRUMENTS—THIRD YEAR.

1 Set Western Reserve University instruments.
This set comprises filling instruments, excavators, amalgam instruments, explorers, scalers, chisels, and burnishers, in all, sixty instruments.
1 No. 2 Woodson Amal. Instrument.
1 Dental Engine.
13 Engine Points: Nos. 1, 2, 3, 4, 7, 16, 38, 55½, 59, 100, 102 and 200.
1 Smooth Burnisher, A.
3 Finishing-burs: Nos. 204, 219, 230.
1 Plug-trimmers: Nos. 31, 32.
1 Donaldson Bristle [roughened] with handle.
1 Donaldson Bristle [hook] with handle.
1 Flexo Files: Nos. 00, 000.
1 Ribbon Saw.

1 Adjustable Saw Frame. Saws.
1 Pair College Dressing Pliers.
1 Pair Foil Carriers.
1 Spirit Lamp.
1 Mallet.
1 Pair Foil Scissors.
1 Pair Small Scissors.
1 Chip Syringe.
1 Water Syringe.
1 Mouth Mirror.
1 Cement Spatula, No. 12
1 Pair Clamp Forceps.
3 Rubber Clamps : Nos. 22, 51, '60.
1 Rubber Holder.
1 Ainsworth Punch.
1 Spool Floss Silk.
1 Box Finishing Strips, Assorted.
4 Boxes Sand-paper Disks.
1 Box Cuttle-fish Disks.
3 Rubber Points.
3 Carborundum Points.
2 Huey Mandrels.
1 Screw Mandrel, No. 301¼.
1 Screw-Clamp Porte, No. 307.
Small Brushes.
Moose-hide Points.
1 Glass Slab.
Napkins and Towels.
1 Piece Chamois Skin.
1 Arkansas Stone.
1 Rubber Polishing Cup.
1 Foil Knife, Bone.
1 Stump Carborundum, Medium.

NOTE.—The College furnishes medicine, alcohol for lamps, rubber-cloth and cotton, gratis to students for their operations. A full set of extracting forceps is also provided.

CLINICS.

The Operative and Prosthetic Clinics provide all classes of material in abundance.

In the first year patients are so provided for the students that they may make trial cases of artificial dentures, which are included in the regular technic course. In the second year practical cases of artificial dentures, including operations in the mouth, are assigned to each student who has completed his technic courses in prosthesis and crown and bridge work.

In the third year students perform all kinds of operations in filling, crown and bridge work, and in artificial dentures and orthodontia. Each Senior is assigned to a chair which he retains throughout the year. Tables for instruments are provided with the chairs; each student also has a locker for his engine.

The many clinical cases afford an excellent opportunity for the use of anaesthetics. In rotation the Senior and Junior students secure ample opportunities for observation by the actual use of anaesthetics in the extraction of teeth and other minor operations under the immediate supervision of a skilled demonstrator. In this department of work the student learns to study heart lesions and idiosyncrasies which prevent the use of anaesthetics. The subject of antisepsis is elucidated and rigidly carried out in this department. The clinical work is performed under the supervision of the professors and demonstrators and each operation is recorded as a part of an examination of each student.

EXPENSES.

The matriculation fee is five dollars which is paid but once. The general annual fee is one hundred dollars which is to be paid upon entering the school. If the full payment of this fee is impossible, not less than fifty dollars is accepted, but five dollars are added to the remaining portion to be paid making fifty-five dollars due the college, that must be paid not later than the beginning of the session after the holidays. The examination fee (ten dollars) at the close of the year is due May the first.

No student is permitted to enter the laboratories and operating room until he presents a receipt for fees from the Treasurer and also is provided with the necessary equipment of instruments and tools.

ITEMS OF EXPENSE.

FIRST YEAR.

Matriculation	$ 5 00
Tuition	100 00
Instruments and Incidentals	30 00
Books	21 00
Examination at close of term	10 00

SECOND YEAR.

Tuition	$100 00
Instruments, including Engine, about	90 00
Books	8 50
Examination at close of term	10 00

THIRD YEAR.

Tuition	$100 00
Books	20 75
Examination at close of term	10 00

No Diploma Fee.

Good day board may be had from $2.50 to $5.00 a week; good accommodations for board and lodging, from $4.00 a week and upwards.

Students applying to the Janitor at the College building, as soon as they reach the city, will be directed to reliable boarding houses, of which he has a carefully prepared list.

For further information, address the Secretary of the Faculty, DR. W. H. WHITSLAR, No. 29 Euclid Ave., Cleveland, Ohio, who will cheerfully answer all inquiries.

SOCIAL LIFE.

The College seeks to surround its students with the best influences. The Faculty therefore encourages all efforts of the students to exert their talents in commendable ways. During the session of 1896-97 a flourishing dental society was organized for the purpose of placing responsibilities of a mature type upon the students, and to inculcate true professional ideas. Each year this society elects its own officers and the president is made Curator of the College Museum, which office he holds during his Senior year. Other societies and organizations exist among the students.

The Delta Sigma Delta and Psi Omega Fraternities, have each a flourishing membership, and are important factors in the college life of a student.

Many of the students become members of the Young Men's Christian Association, which is next door to the College, and thus have use of a fine gymnasium and other means of amusement and recreation. A special rate of membership is made to students.

Exhibitions of various dental appliances and equipments are occasionally given by manufacturers. From these much valuable information can be gained.

ALUMNI ASSOCIATION.

OFFICERS FOR 1897-98.

President—HARRY M. KING, D. D. S., Pittsburgh, Pa.

Vice-President—WILLIAM O. HALDY, D. D. S., Cleveland.

Secy. and Treas.—A. P. BUCHTEL, D. D. S., Akron, O.

The object of this association is to bring together each year those who were associated as members of classes, and to promote their mutual interests.

The annual meetings are held on Commencement day, at 2 p. m., in the amphitheatre of the College.

The programme of the Alumni meeting for May 17th, 1898, will include addresses by Dr. L. P. Bethel, Kent, O., and Dr. W. G. Ebersole, Cleveland.

WILSONIAN DENTAL SOCIETY, 1898-99.

President—C. D. ELDER.

Vice-President—H. A. BALDWIN.

Secretary—T. H. TERRY.

Certificate of Good Moral Character.

This certifies that I have been personally acquainted with

Mr.....

(*Address*),.....

for.....years; that I believe him to be of good moral character, and I hereby recommend him to the Faculty of the Dental Department of the Western Reserve University as one worthy to be received as a student.

(*Signed*),.....

(*Address*),.....

N. B.—All applicants for admission to this school are required to present this certificate of moral character, to be signed by either a reputable dentist or physician, a superintendent of public schools, a principal of high school or academy, or some responsible person known to the faculty.

Western Reserve Academy.

Western Reserve Academy.

IN 1882, upon the removal of the Western Reserve College from Hudson to Cleveland, the trustees decided that the Preparatory Department, which had existed in connection with the College since 1827, should remain in Hudson under the name of The Western Reserve Academy. The ample grounds and buildings formerly occupied by the College were devoted to the use of the Academy; the preparatory course of study was broadened and strengthened, and the corps of instructors was increased.

The aim of the Academy is, primarily, to provide adequate preparation for Adelbert College or the College for Women of Western Reserve University, or for other first-class colleges or schools of science. The ample facilities provided for this special work are also sufficient to give an excellent academic education to those who do not expect to enter college. Graduates of the Academy may not only enter the best colleges, but pass directly into Medical, Law and Divinity Schools, or begin the work of teaching. Many former students are successfully engaged in business or in teaching.

Candidates for admission to the lowest class must be at least fourteen years of age; be able to read aloud, readily and

intelligently, some English selection and to pass a satisfactory examination in the principal facts of Geography, English Syntax and Arithmetic through proportion. They should be able to write a neat and legible hand and understand the use of capital letters and the marks of punctuation.

Candidates for advanced standing will be examined in the studies already pursued by the class which they hope to enter.

Applicants for admission must furnish satisfactory testimonials of good character.

INSTRUCTORS.

CLAY HERRICK, A. M.,
Joint Principal and Instructor in Mathematics and History.

CHARLES THOMAS HICKOK, PH. D.,
Joint Principal and Instructor in History and Latin.

HARLAN NIMS WOOD, A. B.,
Instructor in Latin and English.

HOMER OSCAR SLUSS, A. B.,
Instructor in Greek and German.

MRS. MARY WOOSTER MILLS, A. M.,
Preceptress and Instructor in English.

GEORGIA E. BRISTOL,
Instructor on Piano.

MARGARET MANLEY,
Instructor in Shorthand and Typewriting.

MRS. MARY BLISS,
Matron.

DIRECTORY.

The names of officers are printed in italics. Each name is followed by a symbol indicating the department to which the person belongs, viz:—A, Adelbert College; D, Dental Department; G, Graduate Department; L, Law School; M, Medical College; W, College for Women.

Adams, Agnes .....W..... Euclid, O.
Adams, Sarah A.. { W.....Cor. Euclid and Wymore Aves., E. C.
Adams, W. S..... { A .....Euclid, cor. Wymore Ave., E. C.
Aikins, Herbert A ..W.....25 Cutler St.
Ainger, C. D.. .....L.....788 Fairmount St.
Akins, E. E.....M.....Medical College.
Allen, Dr. D. P.....M.....278 Prospect St.
Allen, E. T.....W.....Guilford House.
Allen, K. C .....A .....255 Franklin Av.
Allison, G. D.....D .....13 Payne Av.
Ambler, Dr. H. L...D.....176 Euclid Av.
Anderson, C. J.....L.....102 Crawford Rd.
Andrews, R. W.....D.....1254 Cedar Av.
Andrus, A. H.. .....W.....128 Sibley St.
Annin, Miss E. C...W..... Guilford House.
Apple, A. D .....D.....119 Huron St.
Ashmun, Dr. G. C..M .....794 Republic St.
Atwater, A. L.....D.....70 Brownell St.
Austin, G. S..... .. M .....Medical College.
Austin, Ida Martha.W.....1257 Broadway.
Austin, J. B ....A .....217 Oakdale St.
Auxter, L. D .....D.....135 Chestnut St.

Babbitt, S. A..... ..W.....Guilford House.
Baer, M. W..... ...W.....Guilford House.
Baker, F. S.....A..... 57 Streator Av.
Baldwin, H. A.....D.....136 Muirson St.
Baldwin, W. S. ... .M.....Medical College.
Banker, D. F.....M.....Medical College.
Barnes, V. E.....D.....Logan Av.
Barrett, W. M.....L.....Glenville.
Bartholomew, M... G.....2238 Euclid Av,
Baum, S. M .....W.....1012 Detroit St.
Baxter, E. C.....A..... ...29 Cutler St.
Beachboard, W. W..A..... .20 A. H.
Beale, G. E.....M .....Medical College.
Beck, M. R.....W.....308 Hough Av.
Beckerman, H. C...M.....Medical College.
Beebe, P. A.....M... ..Medical College.
Beeman, M. E. .....W.....46 Collins Pl.
Beers, M. P..... A.... ..754 Republic St.
Behe, J. H..... ..L.....125 Adelbert Av.
Bell, C. H . ...M .....Medical College.
Bellamy, G. A..... G.....141 Orange St.
Beman, E. I.... ....W... ..29 McConnell St.
Beman, L. T.... ... A.....29 McConnell St.
Benfield, M. E.....W... .....25 White Av.
Benkosky, C. J.....L.....92 Fullerton St.
Bentley, Isabel.....W.....82 Mayfield Rd.
Bernstein, A. E .....L..... .....297 Perry St.
Berry, W. W.....M.....Medical College.
Bethel, Dr. L. P.....D.... .....Kent, O.
Bevier, Isabel.....G.. ...Guilford House.
Bialosky, A. J.....A.....192 Woodland Av.
Bierce, E. C.....A.....131 Streator Av.
Bill, A. H.....G.....858 Logan Av.
Bingham, H. J.....A .....209 Bell Av.
Bishop, F. L.....D ... ...90 Jennings Av.
Bishop, H. F... ...M.....Medical College.
Bissell, C. R.....L.....Hiram House.
Black, J. F.....M.....Medical College.
Blount, Alma.....W.....Guilford House.
Boggs, Dr. Jessie.....W.....1257 Euclid Av.
Bole, B. P.....L.Ansel Av. & Sup'r St.
Borland, R. G. .....D.....137 Chestnut St.
Boston, F. O... .....D..... .....138 Dodge St.
Bourne, B. R..... ..A.....133 Sayles St.
Bourne, Henry E....W.....48 Mayfield St.
Bourne, J. K ..... A.....111 Ingleside Av.
Bowen, H. P .....W.....Guilford House.

Boylan, L. D.....D. .....13 Grant St.
Bradlee, G. M.....W... ....1327 Cedar Av.
Bramley, G. M .....W.....98 Murray Hill.
Bresler, W. M .....L.....1299 Willson Av.
Brewbaker, A. S....W..... 442 Sibley St.
Brewer, A. T......L ...149 Kensington St.
Brown, A. E .....M.....Medical College.
Brown, Elsie May ..W.....125 Adelbert St.
Brown, H. S.....A... ..1458 Linwood St.
Brown, J. D.... ....D .....127 Chestnut St.
Brush, Emma.....W... . .. 166 Quincy St.
Brush, Henry R.....A..... 23 A. H.
Bruml, F. E..... L.....283 Central Av.
Bruner, Dr. W. E ..M.....Medical College.
Bultman, Cornelia..W..... . 49 Vienna St.
Bunce, H. E., Jr.....M.....Medical College.
Bunts, Dr. F. E .....M.....Medical College.
Burke, S B. .....L.....1106 Euclid Av.
Burrell, A. C .....G.....2250 Euclid Av.
Bush, Charlotte M..W.....Guilford House
Bushnell, Ebenezer..Treas...727 Genesee Av.

Cadwalader, J. S....M.....Medical College.
Canon, A. S., Jr. ..D.....156 Oregon St.
Cannon, John L.....L.....135 Chestnut St.
Carey, W. A.....L.....18 Brookfield St.
Carlisle, C. L.....M .....Medical College.
Carlisle, P. P.....M .....Medical College.
Carpenter, Allen H.A.....227 Princeton St.
Carpenter, A. G......L.....125 Streator Av.
Carpenter, H. C... .W....181 Kenilworth St.
Carpenter, M. L....A.....959 Doan St.
Carroll, F. A.....A .....48 Brookfield St.
Carroll, H. A.....W....1282 Woodland Av.
Carroll, V. B.....W.....48 Brookfield St.
Carroll, W. H.....D....1282 Woodland Av.
Carr, F I..... ..A.....55 Miles Park.
Carr, J. C .....A .....55 Miles Park.
Carruth, W. M.... .A ....1678 Willson Av.
Case, Dr. C. S . .....D.....Chicago, Ill.
Chamberlin, W. B...M.....Medical College.
Chandler, H. D.....A.... ...144 Sawtell Av.
Chapman, F. F.... .D..... ....483 Pearl St.
Chapman, H. B .....L.....E. Cleveland.
Chapman, W. H.....A.... .....8 Wilbur Ct.
Chase, B. M.....W..... .1201 Euclid Av.
Claffen, Louise.....W.....446 Dunham Av.
Clark, Dr. F. S.....M.....Medical College.
Clark, J. R..... ...L.....416 Sibley St.
Clark, W. T..... M.....Medical College.
Clapp, Dr. H. T.... M.....Medical College.
Clapp, H. M.....D.....56 Chestnut St.
Cleminshaw, W. H..L .....460 Russell Av.
Clermont, Art. Lee..A.....41 Walker St.
Clifford, Addison B..A.....ΔΥ House.
Cline, A. W..... ..M .....Medical College.
Clisbie, G. C.....M.....Medical College.
Clisby, R. E.....A.....1637 Cedar Av.
Clisby, V. W.....A... .....1637 Cedar Av.
Clum, H. W... .....L.....125 Adelbert St.
Coates, H. J.....A.....58 Archwood Av.
Cobb. F. MacM .....L.... ...2509 Euclid Av.
Coburn, A. L..... W..... 455 Franklin Av.
Cole, T. J..... .... A..... ....908 Case Av.
Collins, F. A.....A. .....BΘΠ House.
Colson, F. D.....A. .....ΔΥ House.
Colvin, Mary Noyes..W.....Guilford House.
Comstock, Dwight..A.....38 Streator Av.
Copeland, M. A.....A..... .262 Hough Av.
Corlett, Dr. W. F....M.....553 Euclid Av.
Corll, M. E..... ....W.....Guilford House.
Couch, W. S .....A. ....Madison.
Cowley, R. H... ....M.... .Medical College.
Cozad, H. I.....M.....137½ Chestnut St.
Cozad, H. O .....L.....41 Cornell St.
Craft, F. A.....W.....180 Wilbur Place.
Craig, Chalmers. . .M.. ...Medical College.
Cramer, Abraham..L.....76 Branch Av.
Crawford, H. J.....L.....29 Afton Place.
Cristy, Rev. A. B....A .....45 Anndale St.
Croll, M. W.....G.....454 Dunham Av.
Crosby, Charles.....A.....1645 Cedar Av.
Crowell, W. S.....M.....Medical College.
Croxton, M. S.....W .....44 Fifth Av.
Cudell, Adolph.....M.....Medical College.
Culp, Clyde S.....M.....Medical College.
Cummings, R. R....W.....50 Wilbur Place.
Cunningham, A. T. R..M....Medical College.
Currie, R. E. .. .. .D .. ....337 Prospect St.
Curtis, J. A .....L.....200 Oakdale St.
Curtis, Mattoon M ..A.... ...43 Adelbert St.
Cushing, Dr E. F...M.....969 Prospect St.
Cushing, Henry P...A .....260 Sibley St.
Cutter, A. S.....W...1174 E. Madison St.

Daugherty, J. E ....M.....Medical College.

Davidson, A. W.....A.....23 Superior St.
Davidson, Bessie....W.....145 Bellfield Av.
Davidson, J. S.....L.....791 Doan St.
Davies, J. P.... ....A .....841 Fairmount St.
Darby, J. C.....M.... . ...850 Doan St.
Darby, Dr. J. E.....M.....850 Doan St.
Darrah, H. C..... D.....185 Chestnut St.
Deering, Robert W..W .....80 Cornell St.
Denis, M. A.....W .....42 Streator Av.
Derby, A. G .. .. .W.....Guilford House.
Dettlebach, F. C....A. .....59 Harper St.
Deutsch, S. J..... ..A ....87 Walker St.
Dever, M. E.....W.....Guilford House.
Dial, E. L.....M .....Medical College.
Dickerman, John ....A.....852 Doan St.
Dickenson, E. S.....M.....Medical College.
Dickinson, Jno. Jr..M.....Medical College.
Diffenbacher, W. F..D.....28 Freeman St.
Dillow, B. M.....W.....Guilford House.
Dissette, C. F.....W..... ..... Glenville.
Dissette, George C..A.....B Θ Π House.
Donley, E. F.....A.....161 Aetna St.
Doolittle, W. F.....M.....Medical College.
Doyle, J. T.....D .....953 Cedar Av.
Draime, C. S.....D .....701 Superior St.
Drake, A. D.....W.....836 Bolton Av.
Drechsler, Wm.....M..... Medical College.
Dryden, D. F.....A .....88 Jennings Av.
Dudgeon, F. O.....D.....98 Chestnut St.
Duffy, E. B .... . D.....810 Cedar Av.
Duncan, H. T.....A.. ..... 78 Fifth Av.
Dunham, I. H. .....W.....388 Dunham Av.
Dunn, J. J.....M .....Medical College.
Dunsford, M. H.....W.....Guilford House.
Dusek, J. L..... ....D.....123 Humboldt St.

Eaby, H. P.....D.....109 Chestnut St.
Eberhard, L. C .....M.....Medical College.
Ebersole, Dr. W. G..D.....176 Euclid Av.
Eby, C. J. .....L..... ... Rocky River.
Eccleston, Inez M...W.... 897 Fairmount St.
Edson, C. R.....D.....Miles Av.
Eddy, R. C .....M.. ...Medical College.
Eggert, F. G .. ....D.....862 Lorain St.
Elder, C. D.....D.....129 Huron St.
Elder, F. B.....D..... ...119 Huron St.
Elliott, C. C.....A.....186 Wilbur St.
Elliott, R. W.....A.....136 Wilbur St.
Elwell, C. H. .... ..W.....Lakewood, O.

Emerson, Oliver F...A.....50 Wilbur Pl.
Emery, E. E.....W.....2086 Broadway.
Emery, J. T.. .....A .....2086 Broadway.
Emery, Vernon J.. A.....8 A. H.
Englander, Isidor...D.... 155 Greenwood St.
Englander, Simon..M..... Medical College.
Eshenour, M. L ....W.....Guilford House.
Ewing, H. W.....L.....1061 Crawford Rd.

Fagnani, Charles P..W..... New York City.
Fairbanks, A. W....A..... . 17 A. H.
Farber, M. J.....A.....214 Woodland Av.
Fauver, C. K.....L.... University School.
Feazel, Ernest A ....L.. 117 Murray Hill Av.
Fenn, Julia .....W..... 774 Doan St.
Finch, L. L.....D.....195 Dodge St.
Fisk, C. W. .....L.....1340 Zoeter Av.
Fisher, A. C..... .D.....195 Dodge St.
Fitch, R. G.....A.. ...13 Livingston St.
Flower, Andrew.....M.....Medical College.
Folsom, A. H... ....A.....269 Franklin Av.
Foote, H. P.....W.... .Guilford House.
Forbes, C. J... . ..A.....911 Logan Av.
Foster, E. H.... ....A... ...316 Denison Av.
Fowler, Harold N...W.... .....19 Cutler St.
Frankle, Miss K. G..D. .....262 Prospect St.
Freeman, Henry E..A.....B Θ Π House.
Freiberger, Isadore..A... .....74 Bolivar St.
Friebolin, C. D .....L. .....15 Lockyear Av.
Friedman, S. B.... .A.....188 East End Av.
Fuenfstueck, G. T ..D.....21 Wendell St.
Fuller, Abraham L..A.....45 Wilbur Pl.

Gale, Lucy.....W.... ... Hower Block.
Gall, G. H.....A .... Δ Υ House.
Galpin, S. L .....A.....106 Miles Av.
Gans, Dr. D. W.....M.....Medical College.
Garfield, Hon. H. A..D.... Garfield Building.
Garfield, J.M .....L.....Euclid Heights.
Garfield, M. L ... ..W.....1646 Harvard St.
Garver, M. S..... A...126 Murray Hill Av.
Gates, Edith B .....W..... 193 Sawtell Av.
Gates, W. S ....A.....193 Sawtell Av.
Gee, J. McC.....L..... .51 Anndale St.
Gehr, R. S.....A..... .29 Cutler St.
Gehring, A. F.....A.. .....83 Osborn St.
Gibbons, Mary L....W .....625 Clark Ave.
Gibson, W. A. .....L .....1174 Willson Av.
Gill, Anna.....W.....434 Kennard St.

Gill, W. C.....M. ....Medical College.
Gillan, A. C ....M.....Medical College.
Gillen, W. W.....D.....701 Superior St.
Ginley, J. V.....L.....24 Ramsey St.
Goldner, J. H.....G.....Chagrin Falls, O.
Goldsmith, B. M....W.....191 Kennard St.
Goodman, Guy T....M..... Medical College.
Graham, J. E .....W.....E. Cleveland.
Grau, F. R.....D..... .Lincoln Hotel.
Graver, J. G.....M.....Medical College.
Gray, E. C.... .. ...A.....2 Sturtevant St.
Green, L. W .....M.....Medical College.
Griste, E. L.....G.....22 Anndale Av.
Grossman, E.....D..Super'r cor. Alabama
Gruener, Hippolyte..A.....6 Adelbert Hall.
Guild, M. A ..... W..... .98 Murray Hill.
Gunlefinger, M. M..A.....42 Wallingford Ct.
Gunn, F. J .....D.....785 Superior St.
Gunn, William E ...A..... 785 Superior St.
Gurley, B. F.....L.....51 Anndale St.
Gwin, E. B.....W ... .44 Brenton St.

Haas, P. A.....D..... 1420 Lorain St.
Haber, Benjamin...A..... ...8 Lewiston St.
Hadden, Alexander..L.....1670 Lincoln Av.
Hadlow, S. G.....W... .... 164 Pelton Av.
Haight, P. T .....D.....136 Muirson St.
Haile, H. B ..... .A.....11 A. H.
Hall, H. M ....M .....Medical College.
Hall, Theodore, Jr..A..... ....Δ Υ House.
Hall, W. C.....D..... .149 Chestnut St.
Hamann, Dr. C. A..M.....282 Prospect St.
Hamilton, Hon. Edw. T..L....262 Bolton Av.
Hamlin, T. L.....A.....60 Bellflower Av.
Hannum, B. G.....M.....Medical College.
Hanson. E. S.....A.....1419 Broadway
Hanson, M. M.....W.....Guilford House.
Hard, H. E.....M..... Medical College.
Harding, G. W.....M.....Medical College.
Haring, Harry A....A.....Δ Υ House.
Harris, Charles .....A..... ..21 Cutler St.
Harris, Chester M...A.....175 Streator Av.
Harris, J. P.....A.....60 Bellflower St.
Haskins, C. B.....L. .. .. .45 Streator Av.
Hatch, S. W.....D.....361 Prospect St.
Haupt, L. L.....W.....106 Euclid Av.
Hawthorne, H. E....A.....117 Adelbert St.
Hay, C. H.... .....M.....Medical College.
Haydn, Rev. Dr. H. C..W.....1509 Euclid Av.
Haywood, H. A. ...A...148 Murray Hill Av.
Heidler, G. K.....M.....Medicel College.
Heimlich, Samuel...L.....704 Detroit St.
Heinig, Emilo. ...M.....Medical College.
Held, Ch. E.....M ....Medical College.
Henderson, G. D. Jr..M.....Medical College.
Henderson, G. M...W .....E. Cleveland.
Henry, F. A.....L....154 Kensington St.
Herr, F. B.....G.....57 Marvin Av.
Herr, F. F.....A.....699 Scranton Av,
Herrick, F. H.....A.....7 Cutler St.
Herrick, F. R.....L..... Russell Av.
Herrick, Dr. H. J . .M.....Medical College.
Hervey, G. E .....D.....176 Euclid Av.
Hill, Corwin T.....M.....Medical College.
Hill, W. H.....L.....814 Cedar Av.
Hobbs, Dr. P. L.....M..... . 1420 Euclid Av.
Hobday, E. J.....A.... ...182 Ontario St.
Hobson, W. S.....M.....Medical College.
Hoffman, G. H.....M.....Medical College.
Hole, Ch. M.... ....M.....Medical College.
Holliday, E. M.....W.....520 Prospect St.
Holmes, Eugene D...A.....102 Adelbert St.
Hoover, Dr. C. H....M.. ...Medical College.
Hoover, C. S.....M .....Medical College.
Hopkins, E. H .....L.....84 Miles Av.
Hopkins, W. R.....L.... .....47 Jones Av.
Hopwood, E. C.....A.....2 Sturtevant St.
Horton, P. I.....W.....16 Quinby Av.
Houck, E. O.....M.....Medical College.
Howard, Dr. W. T..M . ...Medical College.
Howells. H. B.....A.. .... .Miles Ave.
Howland, Paul .....L .....11 Granger St.
Hubbell, R. M.. ....W.....Guilford House.
Huebner, J. J..... .L.... .....94 Sayles St.
Hughes, Arthur D..A.....836 Willson Av.
Hughes, E. A..... .W.....836 Willson Av.
Hulme, Wm. H.....A.... .....95 Cornell St.
Huling, B. W.....A.....39 Cheshire St.
Humiston, Dr. W. H..M.....Medical College.
Hunt, H. A.....W.....Guilford House.
Hunt, M. F.....W.....178 Bell Av.
Hurd, Ch. H.. .....D.....143 Euclid Av.
Hurlebaus, H. W....A .. ..9 A. H,
Hutchins, F. S.....A .....117 Kinsman St.
Hyde, Forrest E....A.....4 Wilbur Ct.

Ickert, F. H.....M.....Medical College.
Ickes, E. M.....M.....187 Dodge St.
Ingram, G. D .....L.....52 Cornell St.
Ingersoll, Dr. J. M...M.....Medical College.

Jackson, F. W . ..A.....898 Doan St.
Jaeger, D. G.....L.....118 Brookfield St.
James, Carl B. .....A..... . .54 Bigelow St.
Jaster, Cyrus .. ....M.....Medical College.
Jaynes, E. H .....A.....133 Sayles St.
Jenkins, H. E.....M.....Medical College.
Jennings, C. H.....M.....Medical College.
Johnson, H. H .....L.....620 Prospect St.
Johnson, T. B.....D.....106 Euclid Av.
Johnston, V. O.....L .... .123 Adelbert Av.
Jones, A. J..... ...A.....1311 Harvard St.
Jones, E. W.... .....A.. ...1358 Harvard St.
Jones, H. A .... . .W.....1635 Harvard St.
Jones, J. C .....L .. ....101 Oakdale St.
Jones, N. M., Jr.....A.....162 Taylor St.
Jones, O. C . .....M.....Medical College.
Jones, O. L.....W.....9 Melvin St.
Jones, R. M.....A..... .....20 A. H.
Jones, Sidney.....M.....Medical College.
Jones, T. J.....D.... .180½ Prospect St.
Jones, W. N.....W .....1685 Harvard St.

Kaiser, J. De... ....L .....1062 Central Av.
Kakes, J. V.....A.....29 Nursery St.
Kaley, A. N.....L..... 1862 Euclid Av.
Kane, G. H .....L.....1862 Euclid Av.
Karger, Louise .. W.....Bellevue Hotel.
Kastrinir, M. W ....A.....731 Scoville Av.
Kauffman, C. L.....W.....104 Irvington St.
Keck, H. E.....D.....13 Payne Av.
Keller, Morris.....L.....117 Adelbert Av.
Kelley, E. R.....D... .....162 Dodge St.
Kelley, G. H. .....L .....791 Doan St.
Kelley, J. C.....D.....57 Sibley St.
Kelley, J. F .....D.... .....
Kellog, A. N .....A..... 624 Scranton Av.
Kellogg, William R. A. .....B Θ Π House.
Kenyon, H. C. .....D. ...260 Woodland Av.
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(Exclusive of Western Reserve Academy.)

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Medical College	35	
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Western Reserve University,

CLEVELAND, O.

ADELBERT COLLEGE.

THE COLLEGE FOR WOMEN.

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THE MEDICAL SCHOOL.

(Formerly known as the Cleveland Medical College.)

THE LAW SCHOOL.

THE DENTAL SCHOOL.

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Other dates as set forth in the catalogue.

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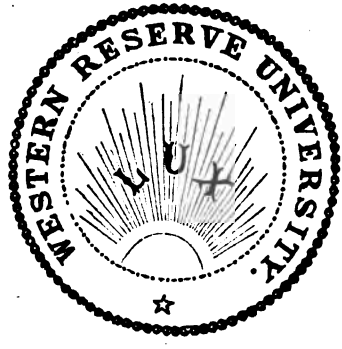

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THE WESTERN RESERVE UNIVERSITY BULLETIN is designed to serve as a medium of communication between the University and its alumni, friends and the general body of scholars engaged in teaching or research. It contains a report of the most important acts of the Board of Trustees and of the Faculty, a record of the publications and public lectures of the Faculty and of the most important accessions to the library; accounts of special research work in prosecution; original contributions from the Faculty or advanced students dealing with subjects of scientific or educational interest; brief summaries of contributions by members of the Faculty to other periodicals; notices of books written by the Faculty, and such other matter as is deemed suitable for the ends in view, which are the diffusion of information in regard to the work of the University, the preservation of a permanent record of its activities and the promotion of science in the broadest sense, by the publication of original contributions to knowledge.

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THE COLLEGE AND THE PRIVATE CONDUCT OF ITS STUDENTS.

It would be hazardous to maintain that a college should have no concern for the private conduct of the students, except when its peace is troubled or its good name brought into disrepute by some flagrant transgression. True, colleges are not reformatories. Their manifest aim is to train the mind and to broaden the intellectual interests. But culture must always have within it a vigorous ethical fibre. As Condorcet said, the object of education should be to replace sensations by ideas, as the guiding power in the lives of men. Whether declared in charters and programmes, or tacitly assumed, it must be evident in the college world, perhaps even more than in ordinary life, that conduct is of greater value than knowledge.

If one is convinced of the soundness of this conception of higher education, one is painfully surprised when the charge is made that college officers shut their eyes to the misconduct of students, or when the practical moral value of a college course is called in question. Two criticisms of this sort occur to my mind. The first came from the principal of a flourishing secondary school. He said that unless colleges took better care of the boys entrusted to them, men of affairs would soon refuse to send their sons to college. Certain boys in college, he added, were going to ruin as fast as they could and their instructors knew nothing about it. These words reminded me of a second criticism, made by an Eastern iron manufacturer, in conversation on the same

subject two or three years earlier. It was his opinion that to many boys a college life was injurious, that without it they were much more likely to succeed in business than with it. The four years given up to college were the years when habits of punctuality, industry, and fidelity were most easily formed, and would be formed if a boy began his business career. But if he went to college it was not improbable that he would become an habitual waster of time, if nothing worse, so that he would be less promising at the end than he was at the beginning of his course.

Every college man, especially if he be a graduate of one of the large Eastern colleges, must acknowledge that there is some truth in what these remarks suggest. But it is the customary conviction of college men that even if a student be lazy or wild for four years, so soon as he receives his degree and becomes an "educated man," he is transformed into a steady, industrious, punctual, and elevated member of society. This is often the case, and yet it serves to commend not the college but the world as the proper school of discipline.

It is easier to prove that the students' conduct is the concern of the Faculty than to indicate the methods by which this concern may become practically effective. Indeed before the attempt is made to ascertain these methods, it is necessary to answer at least one or two preliminary questions. Perhaps the most fundamental is this: are the students on the whole sufficiently mature to control their own conduct wisely or do they still need careful guidance in order that their moral growth may be healthful? But, it may be remarked, has not this question been definitely answered by the general adoption of the elective system? For it would be difficult to show why, if students may safely be

allowed to shape in a measure their intellectual development, they are incapable of controlling their private conduct. It might be urged in reply that a mistake is made in entrusting to students full responsibility in the choice of studies, and that the elective system would be more beneficial were there always in connection with it a careful supervision. If the American college is to maintain its distinctive character and educational value it should not be over hasty in imitating the freedom possible under other circumstances in European universities.

In the discussion of a difficult problem like this, or of the larger question of college discipline, which in a measure depends upon it, individual speculation finds a wholesome corrective in the common sense of those made familiar by experience with college affairs. It has seemed to me, therefore, that it would be some contribution to the subject if I could, as it were, collect this "common sense." To consult all college graduates or even to consult certain graduates of all colleges was impracticable. I therefore selected four institutions, which may be regarded as fairly representative of American colleges—the University of Michigan, for the State Universities; Harvard, which shares with Yale the pre-eminence among all American colleges; Oberlin, the strictly denominational college; Amherst, the New England college, once denominational, now so only in the most liberal sense—and to send to one hundred of the graduates of each a circular containing five questions on various phases of the problem. These questions were:

1. In your college days how did the college officers try to control the private conduct of students?

2. Were the principles of the average student's conduct in your day so well established that it was wise to leave

him pretty much under his own control?

3. Do you believe there is any wise method by which college officers can save a small minority of students (supposing the majority not in danger), from falling into habits of idleness and vice?

4. Has the college a right to exact of students, in the matter of drinking for example, conduct not demanded in their homes?

5. How did the moral tone of college life among students in your day compare with the moral tone of young men of the same age outside of college walls?

It should be unnecessary to add that it was not my purpose to gather information about the policy of these colleges in order to criticize them, or to discover a basis on which to construct a criticism of other institutions. The letters were sent in about equal numbers to the graduates of the classes between 1850 and 1860, between 1870 and 1880, and between 1890 and 1892; and about equally to clergymen, lawyers, doctors, teachers and business men. I desired to draw upon as wide a range of experience as possible. Of the four hundred men who were addressed over one hundred were kind enough to reply—forty-one Oberlin graduates, twenty-six Amherst, seventeen University of Michigan, twenty-six Harvard. The Oberlin replies were distributed among the professions as follows: eleven college officers, nine clergymen, six teachers, five business men, three physicians, three journalists, two government officials, one lawyer, one civil engineer. For Amherst the professional relations were: six lawyers, five college officers, six clergymen, two physicians, two teachers, two business men, and several not classified. Nearly half of the University of Michigan letters came from lawyers, half of the Harvard letters from either

lawyers or college officers.

The purpose of this article is, by an analysis of these replies, to make clear the attitude of one hundred or more representative college men toward the problem suggested by the questions stated. It may be well to remark that the opinions do not show the influence of the professional relations of the writers, nor are the letters written by the older graduates more conservative in tone than those written by men only four or five years out of college.

Oberlin, it appears, has had from the beginning rather an elaborate set of rules covering, according to a grouping given by a recent graduate, the following five general subjects: religion; hours of rest; smoking, drinking, card-playing and dancing; leaving town; matrimony (sic). These rules are of two sorts, as another describes them, "protective (for the benefit of those who came to work), and restrictive (for those who did not come to work)." In only one of all the letters I received is there apparent any disposition to criticise these rules unfavorably. This letter has particular reference to the conditions at Oberlin in the early seventies, when the students were more mature, and expresses the conviction "that, as to the majority of the students, these rules served no other purpose than to cause the students an occasional annoyance." The common view is well expressed by a clergyman, whose college life belongs in the same period. These regulations "seemed reasonable to the average student," he says, "and obedience to them was secured rather because they appealed to the sound judgment and sense of the student than because there was punishment if they were violated."

This assent was won also through personal acquaintance with the students, so that they were far from feeling

that they were being hampered by mechanical Puritanic contrivances. The members of the Faculty evidently did not make use of spies to determine the student's conduct, but relied upon the student himself to report his own misdeeds, at stated intervals. Whether this was of the nature of an auricular confession or an example of the successful use of the oath *ex officio* it is not easy to discover. There is good testimony that it worked well, and in general produced neither lying nor hypocrisy. It is frequently called the "Honor System," and many students evidently believed that while they were in college the control of their conduct was pretty much in their own hands. Others recognized the strictness of the regulations, but valued them expressly on this account. Says one, a journalist, "It had many of the West Pointer's advantages in this respect without the unpleasant martinet features." It must also be remembered, as another graduate remarks, that no statement can reproduce "the moral and spiritual atmosphere of the place—the profound conviction on the part of the instructors that education is as much an ethical and spiritual, as an intellectual process." Still another explains: "There is very much in the Oberlin plan to make it instructive when seen from the inside, though neither that nor any other can be looked upon as a universal or unchangeable model. I would emphasize particularly the integrating influence of that institution as contrasted with the disintegrating, or at least, non-integrating tendency of the university plan * * * Each student has his place in a whole, has a measure of responsibility for the welfare of the whole, receives in turn benefits from the other parts. Thus he learns how to live as a good citizen."

In Amherst, in the earlier days, according to the testi-

mony of graduates, there was a more direct effort to control the student's conduct than at present. A member of the class of '70 says: "I do not recall special laws or rules given by college officers to control the private conduct of students. I believe, however, that the deportment of the students was more closely watched then than now, and that it entered more largely into the standing of the students in the college. My pleasantest recollection of Amherst College in this particular is the healthful Christian influence which the faculty exerted over the students and that kind watchfulness which had great influence in controlling our personal conduct." Amherst had, in recent years, a Senate upon which much of the control of the student's private conduct rested, although it did not usually take the initiative in punishing a student for misconduct. One of my correspondents, in describing this Senate, writes: "All matters outside of the class-room and the students' class-room standing, were left entirely to the control of the Senate, a body made up of members of the several classes, and who were elected thereto by fellow students. Of this system I can not speak words of too high praise. The manhood which is thus generated in the student body can not be estimated except by one who has watched its progress. * * * Under this system each student is not only responsible for the general tone of the college, but is likewise accountable to his fellow-students for any injury that he may do thereto." Aside from the Senate a strong influence has been wielded by the secret societies. To quote the words of a recent graduate: "At Amherst the great fact in the social life of the college is the Greek letter fraternities, some of which have been established from twenty-five to fifty years; of course it is the interest of each fraternity that its members shall conduct

themselves in a becoming manner and cast credit upon their organization which otherwise would lose in the esteem of the community. The upper class-men exercise a general supervision over the younger men in their society, and members of the Faculty who were fraternity men while in college still retain a hold on their own men through the fraternity and thus wield a salutary personal influence in the college community." The testimony of Amherst men, though in general in agreement as to the value of these features of college life, is not unanimous upon the question whether they are always effective.

The University of Michigan, where the scholastic life is especially healthful, has pursued a somewhat different plan, made possible, among other things, by the abandonment of the dormitory system. To quote: "The Faculty gave the students as much freedom from restraint as could be desired. There were no rules governing the students' private life; but in case of notorious dissipation of the student, especially when it interfered with his college work, he was given a timely warning, and then, if he did not improve in conduct and college work, he was promptly expelled. There were only two or three cases of this kind in my four years' college course at the University." An older graduate who had spent two years at a New England college, where, in spite of or "on account of" the strict oversight, there was the traditional uproariousness, describes the contrast which struck him when he began his Junior year at Ann Arbor. "I found," he writes, "there were no dormitories, the marking system had been abolished, there were no class honors or rivalries for prizes. But what was entirely new to me was an intellectual atmosphere and the spirit of earnest work that pervaded the university town.

. . . . .Our President and Faculty succeeded in interesting their students in their work; the numbers were large and there was a strong current in the direction of earnest application which seemed to carry every one with it. A number of our professors were making discoveries and original investigations and were publishing books upon their various specialties. . . .In other words, the University was not conducted as a military post where boys are instructed to do some definite things and continually warned not to do other specific things, but all alike, Faculty and students, seemed to be under the same law and striving for a common object. The moral, as well as the intellectual life, of the students was on a much higher plane than at the college which was governed by stricter rules." But not all had exactly this experience. Says a contemporary of the last writer: "The college officers then and there seemed to consider the work of students as shown in class results. The conduct of a very large majority of the students was exemplary, but I believe there were some who might have been saved to college and a life of usefulness by supervision of their private lives, who went to ruin. . . . .In my own case, under the freedom of those old days, I was a thousand miles from home, paying my own way and conscious of ability to do it, responsible to nobody. I might have gone to the Devil as well as not, and do not want my son to incur the same risks."

At Harvard until three or four years ago there was little attempt to control the private life of the students. "Attendance at recitations and satisfactory work in the courses were the only criteria of good 'private conduct.' If things went wrong here one became a suspect and some kind of a following up on the part of the 'office' began." As another

graduate remarks, "If wrong was done, it was punished; but it was assumed that the student intended to do the right thing." A member of the same class takes a more critical attitude. He says, "if the college officers did try at all, they made abject failures," and adds, "In general Harvard did not do its duty by me. It took me at sixteen, out of a quiet home in a remote town, and gave me no affectionate personal supervision of the elder brotherly sort, and not even effective surveillance of the school-master kind. I think the active personal interest, then, of a C. E. Norton, or a Le Baron Briggs, might have expedited my eventual development at least five years, probably more. That is, it seems to me now that the tastes that I acquired in the next ten years, by teaching and foreign travel, lay dormant in the boy and could have been called out." Such a story as this will not be told of Harvard if the system of "Advisers," introduced five years ago, fulfills its promise of success. The plan is substantially as follows: There is a list of men who have consented to act as "Advisers," and from this list each Freshman may select his own Adviser if he prefers. If he knows no one, the Chairman of the Board of Advisers chooses for him basing the "decision upon the character, position and tendencies of the youth as they are made known by private letters from two references given by himself." In order that the new student may receive a hearty introduction into the life of the college, leading men among the students are asked to co-operate.

Naturally the position of Adviser, requiring sympathy, tact, patience, firmness, is difficult to fill successfully. It appears that among the Advisers themselves there is a wide difference in their theory of the function—"some holding that they should seldom take the initiative in dealing with

the student, but should merely make themselves always accessible. These men are so loath to incur the suspicion of being disciplinary officers that they perhaps go too far in the other way. They say, 'if the student wants me, it is his business to come to me, and my business to do then what I can for him; but otherwise I ought not to interfere with him.' Other Advisers take the initiative and take it almost aggressively." The students appear to think highly of the new plan, although, if rumor is correct, they popularly call the Advisers "Nurses," and in this way illustrate characteristically the old student suspicion of all efforts on the part of college officers to increase their welfare through additional supervision. Johns Hopkins also has a system of Advisers, but the purpose is almost solely to direct the student's choice of studies.

In answering the question whether "the principles of the average student's conduct were so well established that it was wise to leave him pretty much under his own control" there is a rather characteristic division of opinion among the four types of colleges consulted. Graduates of the University of Michigan almost uniformly reply "Yes." One, however, writes: "There was in my day, and always is, a large enough minority of students without fixed principles, to make it worth while to aid them in some way." There is an almost equal unanimity among the Amherst men. Says one: "The moral tone of the student body was as definitely fixed as that of the State with regard to crime, and improper conduct on the part of the student was as quickly discountenanced by his fellow students as the commission of a crime by a citizen of the State is discountenanced by his fellow citizens, and the student government (Senate) was as quick and as just in the rendition of its punishments as are the

courts of the State." One of the older graduates, a clergyman, writes, however, in regard to his college days, "I feel quite sure that the average student needed the wise and wholesome restraint from his college which might be termed paternal in distinction from official." Another declares that he would not send his son to a college that held "that the boy was old enough to take care of himself in other questions than courses of study."

Harvard men look at the matter judicially, but the balance of opinion inclines to the affirmative, with the occasional qualification that even if the students are not sufficiently mature, to leave their private conduct under their own control is the less of two evils. Here is one emphatic negative: "My own (principles) and my friends' were not. We squandered time atrociously, though not in vice, had no regular habits in work and play, and in general were wilful, negligent, (and neglected) children." But a member of the same class says: "The average student in my day was quite as much controlled by principles as the average man of the world."

The replies from Oberlin lean to the negative much as Harvard's do to the affirmative. Several of those who say "Yes" assume apparently that students at Oberlin, merely because they are allowed to report their own misdeeds, control their own conduct. Other letters go back to the time when most Oberlin students were supporting themselves and were therefore relatively more mature than college students usually are. One or two opinions, especially entitled to weight, may be quoted to indicate the general attitude. "I am of the opinion," writes the first, "that students in college should not be regarded as adults. I do not believe that they have reached the age where they would not be better for

moral instruction." Says the other: "The average young man is under the control of his parents and under the influence of his home. When in college he is, of course, withdrawn from the helpful restraints of family life. He needs, therefore, in my judgment, a supervision and direction, which will, as nearly as possible, take the place of that which he loses through absence from home."

It is obvious that these answers correspond clearly with the policy of the different colleges, and it is interesting to notice how generally students and graduates identify themselves with local tradition and allow it to mold permanently their opinion.

Since the answers to the third question touch more closely the main problem they will be considered after a brief analysis of the results of the fourth and fifth questions is given.

It was not the purpose of the fourth question to call out opinions upon the specific point of permitting students to drink beer and similar beverages in case they were allowed to do this at home. That was mentioned as an example. Nor was it supposed that any college would tolerate intemperance of any sort, whatever parents felt about the matter. There is, however, a borderland of conduct in regard to the character of which there is little agreement either inside or outside of colleges. Not all well-behaved Americans are unable or unwilling to dance, refuse to explore the intricacies of whist, define temperance in drinking in the same way, or attend the services of the church as often as did their ancestors. What is the college to do? Perhaps a judicious policy would suggest that it study the convictions of its natural constituency and act accordingly. If it has a history, traditions, convictions, the simpler way is to be faith-

ful to these. Or again it may believe it to be the duty of an educational institution to stand for self-control in debateable matters of minor ethics. But should rules be laid down, they must have the sympathetic co-operation of the teachers else they will be worse than a dead letter.

Probably the question ought to have read "is it wise to exact" rather than "has the college the right to exact." As it is explained in a number of replies, the college may fix any conditions for admission that it sees fit unless the charter forbids.

Oberlin graduates with general unanimity support the stringent rules enforced by their Alma Mater as expedient and right, but one, at least, believes that "it would be wiser if students at college were given to understand that their conduct in college would be judged by exactly the same rules as their conduct would be out of college." Amherst opinion is divided. Among the more conservative opinions are these: "The college has the right to require of students conduct which may not be demanded in their homes, in so far as the welfare of the college seems to demand it. There are habits which may be allowed in the home, with the home influences around the boy, which may not be allowed with safety in college when the boy is out of the watch and care of parents." Again, "No doubt the 'right.' Sumptuary legislation is not a great success." And another says, "Yes," with the proviso that the college is not stricter than the average Christian home.

The testimony from both the University of Michigan and Harvard is similar to that from Amherst, except, perhaps, there is a stronger tendency to understand temperance as self-control, the maintenance of a high standard of gentlemanly conduct, rather than as freedom from this or that

particular indulgence.

In order that any discussion of the fifth question might be instructive, evidently there should have been some consultation of men who have not been in college life, for the graduates of all four colleges are in agreement that the tone of student morals is distinctly superior to the tone of morals prevalent among the same class of young men without the college precincts. A physician, who, though a graduate of Oberlin, has had opportunities to observe other colleges, nevertheless says "there is a large percentage of college boys of high moral tone and character, but in some of the larger schools, particularly in some of the Eastern schools of which I have known a good deal, I should say that it certainly was not higher than that of young men outside of college walls. I have thought sometimes that there was a considerable minority who were in college simply because they were sent, and who, separated from home restraints and having a considerable amount of money to expend, were under much less moral restraint tha other young men."

If we acknowledge with one of my correspondents that the comparatively favorable moral tone within college walls "affords no reason for neglecting to make it higher" we are ready to consider suggestions of means by which it may be elevated. In a measure these will be conditioned by the college experience of the writer, but not sufficiently perhaps to make it necessary to examine the four sets of replies separately.

The students in any college are a selected body of young men, because at their entrance they were required to meet a certain standard of at least intellectual attainment. It must be assumed that they all have good moral characters, because this fact is stated uniformly in their certificates

and letters of recommendation. But those who go to pieces after entering college, however noble their aims were while applying for admission, will be generally found among the less scholarly. They could be excluded by making the entrance requirements more severe. One of the older graduates of Harvard, and himself a college officer, remarks upon this point, "so long as the colleges truckle to the dishonest desire to get a degree for nothing they will find themselves encumbered by a 'small minority' or possible majority of men whose whole college course is based upon an intended 'fraud.' "

After a student enters college it is obviously necessary to furnish him with sufficient work, and to see that he does it. If this simple suggestion, made in several letters, were successfully carried out, no college career would ever be made up, as many are now, of alternating periods of picturesque leisure and enforced but superficial work. "If," says a graduate of the University of Michigan, "students are kept up to their work as strictly as young men in business are kept up to that, and discharged from college for unsatisfactory work or behavior, as quickly as they are from business, the 'private conduct' would be suitably controlled, the principles of conduct satisfactorily established, students saved from idleness and vice, and the moral tone raised much higher than it is."

An Oberlin graduate believes there should be "protective" regulations after the manner of those at his Alma Mater. Another, though not criticizing the Oberlin system, maintains that the "wise method of college discipline is that which throws upon the large majority of the faithful and right-minded students the largest possible responsibility for the correction of evil and the re-inforcement of right in the

"small minority who are inclined to fall into habits of idleness and vice." "The cultivation of virtue," he adds, "of manliness, of course, is the thing to be sought after and not compulsory freedom from outward manifestations of vice simply."

It is apparent from the letters that many college men would applaud a more general use of expulsion wherever it is proved that students are vicious and exert an unfavorable influence on their class-mates.

From different quarters come suggestions of throwing student influences about men who seemed doomed intellectually or morally to failure. This may be done through fraternities, as urged by an Amherst man, or through an Adviser system like that at Harvard or privately and unofficially. Says a recent graduate, "a wise officer can do much for such a man by quietly arranging with some strong man —perhaps not the best student; for the best or most promising student will be patronizing, and the failing student dislikes to be patronized—to be with him; encourage him in his work and influence him for the right."

The need of closer personal relations between teachers and students is emphasized by graduates of all four colleges. "This," says an Amherst graduate, "rouses and maintains the student's self-respect, enables the teacher to understand the boy and so help him, and tends to keep the students as a body from forgetting that the standards of living in the college are the same as those of intellectual society outside." The end will not be accomplished, writes another, by "compelling students to listen to what they would call lectures, not by the 'look-at-me attitude' on the part of the professors. Perhaps the most can be done by personal associations between professor and students on a

common level. If the professor is an honest, sincere man, and a good fellow, who has not borrowed or inherited all his ideas, this course can not fail to have an influence."

But without inflicting lectures upon their students, teachers may speak to them on matters of consequence to the college community. A graduate of Harvard recalls as an illustration, "an informal talk by President Eliot on the danger to individuals, and on the harm to the college as a whole, through the indulgence in drink by a few of the students. The friendly conversation asking for the students' co-operation in this work of importance to the college and to its students had great influence."

To this analysis of letters I wish to add a few words from one of the older Harvard graduates. He writes: "anything like espionage is hateful. In generous minds it produces open revolt. In small souls it develops lying, hypocrisy and cheating. My own experience in the examination room is that men who are put on their honor are thereby kept from communicating with one another more than those who are watched by proctors. And so in the conduct of life. If there were a little less preaching about right and wrong, from the stand-point of commandment, and a great deal more done to inculcate in the minds of young men ideas of what is becoming to gentlemen in a good sense of the term, the best results would be achieved. . . . . .The daily presence and the life of the late Dr. Andrew P. Peabody, was, I think, a great influence for good. He was so obviously a good man, without cant or affectation, that he made goodness a beautiful thing. Good examples, full confidence, and wholesome environment, plenty of work, enough play, ought to save any saveable youth. . . . .the college environment should be such as

to foster high thoughts. A young man needs a fair supply of ideals to start in life. Certainly the idea of Honor is the best of them. If the college training is such as to make the college student feel that disloyalty, falsehood and debauchery are ungentlemanly vices, it will have achieved all we can hope."

I wish to quote also from a letter written by an officer in the University of Virginia, because this institution has been unusually successful in inculcating among its students a feeling of honor. The writer says that he believed while an undergraduate and believes now, "that it is not only wise but necessary to leave the college student to govern himself. Some will fall into error, some into vice, but it is a time in the life of a young man when his character needs the very discipline that is offered by this reliance upon his own powers of self-control. If at this period students are kept under constant surveillance their characters are likely to be permanently distorted. All that can be done and ought to be done is to bring every salutary and uplifting influence to bear upon the student's life, to offer legitimate and wholesome amusements as rivals of those that are unhealthy and illicit, to encourage among the young men a feeling of personal pride and honor and self-respecting uprightness, to establish a public opinion among the students which frowns upon gross vice and all forms of dishonorable action; in other words, to make the college career in this way a moral gymnastic and create out of the college student a worthy, honest, upright citizen."

Although there is in these letters a diversity of opinion upon the question concerning the average student's maturity of character, it is evident that the larger number of writers do not believe elaborate systems of rules necessary or

wise. They think that such regulations defeat their object, which is the proper development of character. Under exceptional conditions, of course, regulations may be free from this tendency. But ordinarily, if the feeling prevalent among those I have consulted is fairly representative of the common sense of college men, the means which the college should adopt in order better to direct the student's conduct and to guide him in the development of a sound character, must be summed up by the phrase multiplication of influences, rather than multiplication of rules.

From the answers to the first question it is apparent that changes of two kinds have been in progress in such institutions as the four selected as representative. The deeply religious tone of colleges like Amherst, and especially Oberlin, in the days before the war has been gradually giving way before more strictly intellectual, more secular, interests. In a certain measure, therefore, such colleges can not exercise so close a control as they formerly may have, over their students. Even if they retain their severe regulations, savoring a little of the régime of the old Puritan New England communities, these regulations tend to become rationalized. Card playing is no longer considered wrong; it is looked upon as a waste of time. But, whether rationalized or not, judging from the Oberlin letters, such rules are by no means so obnoxious to the student himself as to the critic standing outside, and knowing little of the spirit which informs them.

But another change has taken place in a more positive direction. This finds its illustration in the Harvard and Johns Hopkins system of Advisers, and in the now defunct Amherst Senate. As already suggested there is a growing conviction that in some way the teacher must be officially

of greater help to the students, not merely in the class-room but in the common life of the college. This conviction comes out clearly in the answers to the third question, sharing the emphasis only with the recommendations that a high standard of intellectual work be maintained. Fortunately one of the old barriers to the teacher's active influence has been greatly weakened, if not quite destroyed, by the elective system probably as much as by any thing else. Fifteen or twenty years ago if a student at Yale stopped after recitations to inquire of his instructor further about some important matter, like the use of some particle in Euripides, he would be accused of "suping for stand." Contemporaneously at Amherst his class-mates would think he was trying to "stack rank." The same barrier existed at Harvard in earlier days. One of the oldest graduates writes: "In my college days there was no intercourse whatever between teachers and students outside of the recitation. The feeling, then universal among the students, that any speaking to a professor was toadying for marks made it impossible." Professor Peabody in his Harvard Reminiscences says that sixty years ago, "It was regarded as a high crime by his class for a student to enter a recitation room before the ringing of the bell, or to remain to ask a question of the instructor; even one who was uniformly first in his classes would have his way to Coventry made easy."

This peculiar esprit de corps, this traditional jealousy of their independence, was not without its useful influence over the student. It was so strong that within a few months it was able to chasten, if not to subdue, egotism and to replace a disagreeable "freshness" or immaturity by a new dignity and a respect for the rights and privileges of others.

It made students realize their responsibility for the good name of their class and their college much in the same way in which the members of a mediaeval guild were eager in the defense of their corporation. And yet this feeling was not strong enough to keep some boys from going wrong, who, by other means, might have been saved from making dangerous moral experiments.

Every plan to bring teachers and students into a closer intellectual and social fellowship finds the greatest obstacle to its success in the rapid increase of the student body. This does not present merely the difficulty of numbers, a difficulty with which all colleges seem eager to struggle. As a graduate of the University of Michigan puts the case, "The trouble now is, and it has been increased in my day and is still increasing, that education is becoming fashionable and desired by almost all for their children, but the children do not all desire it, so they are sent to college anyhow, and the college is expected to 'do the rest.' If it were a manufactory no one would expect to take in hemlock lumber and turn out mahogany furniture, or raw cotton and turn out woolen goods, but being a college it ought to perform greater miracles than these."

If a boy at a certain age goes to college because it is the fashion, and if his parents encourage him to indulge handsomely in this fashion, the college will find the task difficult, not of making a scholar of him, but merely of making an industrious student, open to the elevating influences of the intellectual life. A Harvard graduate writes: "If I were disposed to hazard a guess at the worst influence in my own college, I should say that it was the presence of a very considerable number of young men whose injudicious parents encourage the 'dog-cart tendency;' that is to say, allow suffi-

cient income to the striplings to enable them to indulge in all the vice that is to be found in the neighboring city. I do not know, however, that I am sufficiently informed to express any final judgment even on that point. I have known some instances of lads running the road to ruin without any means, and others who have turned out excellently in spite of the temptations of a large allowance."

Obviously it is more difficult under these circumstances for the college officers by any method to control conduct than in the simpler conditions of earlier days, especially at such institutions as Amherst or Oberlin. A lawyer who was graduated from Oberlin in the seventies says: "The students at Oberlin, at the time I attended there, probably were, on an average, older than students attending other colleges and the students at present attending Oberlin college. Their vacation was held in the winter so as to enable them to help themselves by teaching school, and Oberlin was pre-eminently at that time a college for students seeking to secure an education by their own efforts."

There is a difference of opinion about the tendencies of college dormitory life, and yet it is apparent that such a life is incomplete socially on the side where a measure of completeness is necessary. Although to some boys four years in a dormitory mean only a happy freedom from all uninvited interruptions, for others there is such an absence of the restraints of ordinary society that they fall into habits which in subsequent years they are or ought to be obliged to correct. It is felt that the college must, therefore, devise some way of rendering more healthful the social environment of the students. Many teachers individually attempt this by entertaining students in their homes. Mr. George Birkbeck Hill, in his book on Harvard, a little forgetful of the

strength of total abstinence sentiment in this country, and. with a praiseworthy desire to increase the common social life of teachers and students, suggests a "Hall for the Professors, Assistant-Professors, Tutors and Instructors, a noble kitchen, a good cellar, a stock of old wine, and half a dozen Common Rooms." But perhaps a noble kitchen with even ice water, might serve to bring instructors and the members of their classes together in a friendly and stimulating intercourse.

There is one opportunity for influence where influence is most needed, which apparently has not hitherto been appreciated by college authorities. Not all the instruction in college is given by members of the faculty. Certain students regularly, others in the immediate presence of examinations, employ private tutors, who may be graduates, but are more likely to be undergraduates, probably members of their own class. This system of private tutoring is naturally one means by which capable young men are able to pay for a college education. Their interests are important, and yet they may be guarded in other ways, if it be wise that such additional instruction as they give should be furnished by the college itself.

It seems to me that here is an opportunity for the Faculty to gain a firmer control over those who by their classwork failures are seriously in need of direction. Whatever the cause of the failure, the Faculty should take cognizance of it and strive itself to apply the remedy, and not allow this to be done partially and clumsily by any unauthorized person, for a consideration. The day a student's work becomes seriously defective in any course of study, that day he should be put under the care of an instructor of tried ability who would help him to regain his standing. At Harvard

this is already done to some extent in the History department, with the help of the assistants.

If such a system were adopted, the college authorities would gain control in quite an unobjectionable way over the students who most require supervision, and would be better able not only to raise the standard of the student's work but also, incidentally, to guard him against moral recklessness. Everything would depend upon the character and tact of these new instructors. They should be selected not so much for accurate scholarship as for distinction as men, for capacity as teachers and leaders. If they had won an honorable reputation in college contests; in athletics or in intercollegiate debating, for example, this should recommend them. Such an experiment may be open to objections, and yet it seems apparent that if wisely attempted, its results could not be other than beneficial. The work of the new instructors might serve to bridge the perhaps narrowing chasm between Faculty and students, and enable the Faculty to make of their office an even more noble intellectual and moral leadership than it is now.

College life may indeed be freer from the taint of idleness and vice than some of its critics believe, and yet with such a body of picked men as enter the college gates each year, it would seem possible to obtain a still higher morale. Not that the college boy may become a premature Pharisee, with an inflated sense of his own comparative excellence, but that he may be able to unite with other men, whether trained as he has been or not, in mastering the social turmoil of the present day by a leadership *sans peur et sans reproche.*

HENRY E. BOURNE.

PORTRAITS OF VIRGIL.

Probably no writer of the golden age of Roman literature was more famous in his own day and immediately after his death than Virgil. Certainly no classical writer enjoyed half the fame during the middle ages which fell to Virgil's lot. Yet, so far as is known, no authentic, satisfactory portrait of him exists. In fact, until recently, our only knowledge of his personal appearance was derived from the brief description given by Donatus in his Life of Virgil, 8(19), p. 56 R.: "Virgil was of tall stature, dark complexion and rustic countenance: his health had even before been uncertain (the description follows an account of the poet's last illness), for he suffered much in his stomach, throat and head. He often even spat blood. In food and drink he was very sparing." It is possible that Horace, Sat. I, 3, 29ff., may refer to Virgil. If that is the case, Virgil was somewhat irascible, wore his hair in countrified fashion, let his toga fall in ungraceful folds, and was careless about tying his shoes. But it is not at all improbable that in these lines Horace is referring to himself; and in any case, little is added to our knowledge of Virgil's appearance.

Portrait busts of Virgil were common in times not long after his death, for Suetonius (Calig. c. 34) says that Caligula was on the point of removing them from all the libraries. Pliny (Ep. iii, 7, 8) tells us that Silius Italicus "honored them above all others he bought," Juvenal (Sat. vii, 225ff.) speaks of Horace and Virgil as being blackened by the soot of the schoolroom, and Lampridius (Alex. Sever. 31) says

that Alexander Severus set up the likeness of Virgil with that of Cicero in a *lararium* or private chapel.

From all this one might expect to find many extant portraits of Virgil, but there are none which have been positively identified. A bust in Mantua has been called a portrait of Virgil, but there is no real reason to believe that Virgil is represented. The name was given to the bust by Vespasiano Gonzaga (1531-1591), and the Abate Carli, when he had brought it to Mantua in 1775, tried to prove that it had originally belonged to a statue, supposed to represent Virgil, which Carlo Malatesta had thrown into the Po or the Mincio in 1392. The arguments advanced fail utterly to prove the connection of the bust with the statue, and in itself the bust bears no evidence of being a Roman portrait. (*)

Similar busts exist in other museums. A long haired youth is represented with idealized features. What ground there is for giving the name of Virgil to a statue in Howard Castle (†) I do not know, but there is apparently no great probability that the name is correctly given, nor does any recent authority attach the name of Virgil with any confidence to any bust or statue.

But if busts and statues fail to preserve the features of Virgil, it is still possible that some representation of them may exist. Martial, XIV, 186f., says:

Quam brevis immensum cepit membrana Maronem,
Ipsius vultus prima tabella gerit.

In other words, the likeness of Virgil used to appear as a frontispiece in editions of his poems. It would seem

(*) See Bernouilli, *Roemische Ikonographie*, I, p. 248. For references see also Comparetti, *Virgilio nel medio evo*, I, p. 185, *Vergil in the Middle Ages*, p. 139.

(†) Michaelis, *Ancient Marbles in Great Britain*, *Howard*, 13, Clarac, V, 904, 2313 A.

possible that in the miniatures of some existing manuscripts copies more or less close of the likenesses to which Martial refers might be found. The difficulty is that the manuscripts belong to times so long after Virgil's death that even when they contain representations of the poet there is no certainty that his features are correctly represented. In fact, the miniatures do not agree one with another except in a few cases and may be disregarded with the exception of those found in one manuscript, the *codex Romanus* in the Vatican library. (*) This manuscript has been referred to various dates from the fourth to the thirteenth century. It is written in capitals and adorned with nineteen miniatures, three of which are intended to represent the poet. The manuscript was in the library of the abbey of St. Denis, near Paris, in the thirteenth century, as is shown by the words found on the fourth leaf, in handwriting of that period, *Iste liber est beati Dyon (ysii);* but by about 1484 it was already in the papal library. The fact that the manuscript is known to have been in France before it came to Rome lends additional probability to de Nolhac's suggestion that it may be a product of the revival of art and learning under Charlemagne. At any rate, it is reasonable to assign it to a time later than the sixth, but earlier than the twelfth century. The largest of the three representations of Virgil is thus de-

(*) The latest, and probably the best, account of this manuscript is by P. de Nolhac in the *Mélanges d'Archéologie et d'Histoire*, 1884, pp. 316-333. This is the publication of the École française de Rome, C. O. Müller, *Handbuch d. Arch. d. Kunst*, p. 734, mentions a manuscript in Vienna with portraits of Virgil. Bernouilli, *l. c.*, knows this only from Müller's reference to it. It is not mentioned by Hoffmann, *die Wiener Vergil-Handschriften*, in *Zeitschr. f. d. österr. Gymn.*, 1865, pp. 477-508, unless it is included among those which he says "may properly be neglected as belonging to the fourteenth to twentieth century". Apparently Müller's reference is an error.

scribed by de Nolhac: "F. 3vo. Middle of the page, before the second Eclogue. The poet is seated in full face on the green cushion of an elevated chair, his feet on a footstool; he holds in his hands a purple roll. He is clothed in a white toga disclosing the purple bands of his tunic with two bits of the same color below. At his right is a *pluteus,* at his left a closed *scrinium,* both of the brightest vermilion." The other two portraits in the manuscript resemble this in all respects except that they are smaller, and the footstool is omitted, the feet of the poet resting on the border of the picture. (*) A few words may well be added to de Nolhac's description. The workmanship of the miniature is rude; the hands are ill formed, with long, curved fingers, and the face is devoid of expression. The eyes are large and staring, the nose hardly more than an elongated rectangle descending from the forehead, the mouth a broad and nearly straight horizontal line. The general impression made by the face is that of early youth. If anything is to be learned from the miniature it is only that Virgil was supposed by the miniaturist to have worn his hair short. Since the three miniatures agree in nearly all particulars it is not improbable that they are all derived from some miniature in an earlier manuscript, and in that case the type may go back to an early date, perhaps almost to the poet's own time. But even if that be so, constant copying for centuries has left little of the original likeness, and the miniatures of the *codex Romanus* throw little light upon the question of Virgil's

(4) The large miniature is published by Mai, *Virgilii picturae antiquae ex codicibus Vaticanis*, Romae MDCCCXXXV, Pl. I, and in photographic reproduction by de Nolhac, *l. c.*, Pl. XI. All the miniatures of this manuscript are published by D'Agincourt, *Histoire de l'Art*, vol. V, Pl. LXIII. For references to other discussions of the miniatures see Bernouilli, *l. c.*, and Comparetti, *l. c.*

real appearance.

Two mosaics discovered in recent years give a little more information, but not much unless by their aid it becomes possible to identify some bust or statue as a portrait of Virgil. The first is the mosaic of Monnus, discovered in Trier, Oct. 31, 1884 (*). This is a large mosaic, which once covered the entire floor of a room. Part of it has been destroyed, but enough remains to make the disposition of the whole clear. Broad bands of ornament form a framework for a series of medallions grouped about a central panel in which *Omerus* was represented between *Ingenium* and *Calliope*. Unfortunately this panel has suffered greatly. The other medallions contain representations of the twelve months, of the signs of the zodiac, of poets, authors, or musicians being instructed by the Muses, and busts of actors and authors. The busts of authors are enclosed in squares, and it is among these that the portrait of Virgil is found. Strictly speaking this portrait is not a bust, for the head and neck onlv are represented with but a slight indication of the upper part of the shoulders. The face is youthful, the hair short but thick, and worn with no parting. The head is in full face, but inclined a little toward the right, while the neck is not exactly vertical, but slopes upward toward the left. This makes it seem that the head is slightly turned toward the right. The eyes are wide open, and the pupils are in the upper part of the eyes. This shows that the gaze of the poet is directed upward, and gives a look of liveliness and energy to the face. Nose and mouth are too ill drawn to be of much service in establishing a likeness. The inscription,

(*) Published with description by F. Hettner, *Antike Denkmaeler, herausgegeben vom k. deutschen archaeologischen Institut*, I, 4, 1890, pls. 47-49.

Vergilius Maro, leaves no room for doubt that Virgil is represented, but it is possible that this is a purely imaginary portrait, not a real likeness. The other faces and figures of the mosaic, however, show such strong and undeniable relationship to works of earlier times (*), some of the heads are so clearly copies of more or less well known portraits, that the probability is in favor of the assumption that the head of Virgil also is a copy of a genuine likeness of the poet. The purely decorative style of the mosaic, however, added to the natural limitations of mosaic work in general, forbids us from the start to expect the portrayal of any fine points of physiognomy or expression. The general shape of the head, a somewhat elongated oval, with rather narrow chin, the plentiful short hair, perhaps even the posture of the head and the wide-awake expression of the eyes, may have belonged to the original protrait. But the last mentioned peculiarities, posture and expression, seem to be characteristic of an idealized portrait rather than of one which would represent the poet as he actually lived and moved, so that if the mosaic is in those particulars a faithful copy of an earlier original there is room for doubt as to the faithfulness of that original to the real appearance of the poet. The mosaic of Monnus belongs apparently to the fourth century, and at that time there were undoubtedly many portraits of Virgil accessible to all. How accurate such portraits were would depend upon the care with which they were executed and the excellence of the model selected.

The general appearance of the mosaic head of Virgil is that a copy of a sculptured original rather than of a paintng, and the fact that the types of the heads of Hesiod and

(*) See Wolters, *Jahrbuch d. k. deutschen arch. Inst.*, 1890, p. 213.

Ennius in the mosaic have been recognized in well known busts(*) lends additional probability to the suggestion that the original of the Virgil is to be sought among works of sculpture. As yet, however, no bust of Virgil corresponding to the mosaic has been found, and the style of the mosaic makes the identification of a sculptured copy of the same original exceedingly difficult, though, it is to be hoped, not impossible.

The second mosaic was found in the autumn of 1896 at Susa, in Tunis (†). It is a small panel, hardly one meter square. In the centre is the poet, seated in an arm-chair, in full face as in the miniatures of the *codex Romanus*. He is clothed in an ample white toga with blue border, and his buskined feet rest upon a footstool or raised step. Upon his lap he holds a partly open scroll, on which are the words:

Musa, mihi causas memora, quo numine laeso,
Quidve.....‡

This suffices to show that Virgil is represented. He holds his right hand to his breast, and appears to be listening with rapt attention to Clio and Melpomene, who stand behind his chair at the right and left. Clio is represented as a young girl, gracefully clad in a light blue tunic over which is draped a cloth of light yellow thrown over her left shoulder. Her right arm is bare. In her hands she holds a roll, from which she is reading. Melpomene is a woman of more mature years, clad in rich theatrical costume. In her

(*) Wolters, *l. c.*

(†) Published with a letter from the discoverer, P. Gauckler, in the *Comptes Rendus de l'Academie des Inscriptions et Belles-Letters*, 1896, pp. 578-581. My description is taken from this letter. Also published in *The Bookman*, July 1897, p. 104.

(‡) Aeneid, I, 8-9.

left hand she holds a mask. Her right elbow leans upon the back of the chair.

The composition is clear and simple, strictly symmetrical, but with symmetry tempered and made agreeable by the variety in the costumes and attitudes of the Muses. The *technique* of the mosaic is excellent, all the cubes being of marble, with the exception of a few smalts. The number of colors is limited; but an effect of unusual breadth and brilliancy is produced by the clever gradation of shades or the sharp opposition of complementary colors. The excellent style of the work shows that it belongs to a good period of art, and Gauckler suggests the end of the first century after Christ. This is, therefore, by far the earliest portrait of Virgil known.

There is nothing very attractive about the face here represented. It is broad, with projecting cheek bones; the hair is not so copious as in the mosaic of Monnus, and falls in slightly disordered fashion over the forehead; the features are harsh and pronounced. The mosaic is, to judge from the publication in the *Comptes Rendus,* slightly injured near the tip of the nose, but the nose appears to be straight, not aquiline, and somewhat broad at the end. The chin is strong and prominent. Gauckler says that the prominent chin is characteristic also of the Vatican miniature, but in this he is mistaken. The chin of the miniature is formed by a weak and expressionless curve, quite in keeping with the entire lack of individuality in the face.

There is great general similarity between the Susa mosaic and the miniatures. In both cases the poet is represented as a beardless man with short hair, seen from the front, clothed in a white toga, with buskins on his feet; he is sitting in an arm-chair, and holds a roll of manuscript on

his knee. We may even add that in the miniature the desk and book-box are arranged symmetrically at each side of the central figure, corresponding in this way to the Muses of the mosaic. Nevertheless, no close connection between the mosaic and the miniatures is to be thought of. The mosaic shows strong individual traits, and may be assumed to be a copy, more or less faithful, of some one definite previous work. The miniatures have the peculiarities of their style, but nothing individual, and the custom of representing literary men seated in arm-chairs was so general in late antiquity and the early middle ages that no importance is to be attached to the fact that Virgil is here seated in an arm-chair. Nor is the symmetrical arrangement of desk and book-box a sign that the miniatures are derived from the same original as the mosaic, for such arrangement has been usual in all ages. It is possible, as has been said, that the miniatures are derived from some early original, but there is no reason to believe that it is the same as the original of the mosaic, and it may be that they merely reproduce a general type of literary man, seated with his professional implements at hand.

At first sight there seems to be little resemblance between the Virgil of the mosaic of Monnus and that of the Susa mosaic. At Trier, Virgil is represented as youthful, alert and vigorous, with full face tapering to a well-rounded and not too prominent chin. At Susa he appears older; his cheeks are thin, his cheek bones project, and his chin is strong and prominent. The differences may be in part accounted for by the apparent age of the poet, the greater prominence of the bones of the face in the Susa mosaic being only natural in a man of middle age who had been long in ill-health; but the differences in the osseous structure

itself, the greater breadth of both forehead and jaw in the Susa mosaic, can hardly be laid to the account of age. We have seen that the Virgil of the Monnus mosaic probably goes back to a sculptured original, which apparently represented the youthful Virgil somewhat idealized. The whole arrangement of the Susa mosaic, on the other hand, implies an original of quite different character. There is nothing statuesque about this representation, and nothing ideal. The original of the Susa mosaic must have been a painting of some sort, and must have represented Virgil as he appeared in his later years, without attempting to obliterate the traces which ill health had left upon his face.

If these results of the comparison of the two mosaics are correct, both may still be regarded as copies, at third or perhaps twentieth hand, of genuine portraits of Virgil, but the original portraits were probably as unlike each other as the Weimar bust of the youthful Goethe is unlike the portraits of his later years or as the Napoleon of Delaroche is unlike the Napoleon of less gifted or less imaginative painters. In all probability the Susa mosaic is the better portrait, if that is the better portrait which shows us the man as ordinary persons saw him; but the original of the Monnus mosaic would, perhaps, show us the great poet as he appeared to the eyes of a brother poet whose works were carved in marble or were cast in bronze.

HAROLD N. FOWLER.

SENSATION, MOVEMENT AND THOUGHT.

The reciprocity of bodily and mental changes is matter of common observation. We wish to do a thing, and the movement follows directly and at once upon the willing of it; the action is the incarnation of the idea, the thought made manifest to us. A score of times a day we catch ourselves doing things, either from habit or imitation, which we did not will to do. The movement follows directly upon the arousal of its image, or the image of its results, without the intervention of choice or effort; the idea has become a self-incarnating one. We imitate our neighbor's yawn, counterfeit his smile, mimic his gestures, and repeat his movements without definite purpose or thought of any kind; the presence of the idea alone seems to be sufficient to touch off the whole train of reactions which follow. If we are alarmed by a sudden noise, the heart palpitates, a shock of trembling runs through us, and a very complex series of effects more or less obscure takes place. Such things as these we know because they are continually being forced upon our notice. But the intimacy and habitualness of this connection, the closeness of the parallelism between consciousness and its physical coefficient, is overlooked by us. It is only when close and continued observation has been given to the phenomena that we begin to recognize their extent and significance. One fact of connection is patent to all, namely, the phenomenon of voluntary action. I will to raise my arm and the arm rises. I need a book from a shelf across the room, at once I go over and take it down.

The clock reminds me that the hour of a lecture has arrived, and I lay aside my writing and go to meet the class. But the facts of movement are connected with ideas in other and more obscure ways, the incoming sensation arouses physiological changes and motor reactions which we constantly overlook, and both sensation and motor idea enter into the make-up of our conscious life of thought and feeling in ways, which at first blush, we may be disposed even to deny and reject.

II.

And first of functional changes and muscular reactions following upon sensory stimuli independently of the will. The effect of any massive stimulation of the sense-organs is matter of every-day observation. If a gun is unexpectedly discharged close by us we are shocked and startled. The breath is drawn in with a convulsive gasp and held suspended, the knees tremble, the heart first stops, then beats tumultuously, the blood pressure and distribution are affected, and paralysis or constriction of the vaso-motor system is occasioned, involving changes in glandular secretion. intestinal action, flushing and paling, and an indefinite number of other alterations in the character of the physiological processes. It is probable that every such sensory stimulus, slight and weak as well as intense and voluminous, produces a change in the functions of the body, though many of the results escape our notice on account of their slight amount or the obscure character of the processes involved. Every stimulus, of course, produces a change in the sense-organ upon which it impinges, in the nerves connected with it, and in the brain-centres with which these unite the particular organ excited. Seeing involves changes in the pigment

cells of the retina, as well as excitation of the optical nerve and occipital lobe of the brain. Hearing is dependent upon certain adjustments of the ear-drum, and stimulation of the nerves of the semi-circular canals and cochlea, as well as of brain tracts and ganglia analogous to those connected with the perception of visual objects. Similarly of tactual, gustatory, and other stimuli.

This, however, is not the form of effect referred to. Besides the direct stimulation of nerve paths and centres in the sensation, there is present in all cases of stimulation of any sense-organ, an effect, of greater or less degree, upon other processes of the body as well. The excitement communicated through a particular sense-organ to the brain, and producing a rise in its nervous tension, extends itself to adjacent processes in the form of a diffusive wave, involving a greater or less number of changes, varying in extent and degree according to the intensity and voluminousness of the stimulus concerned. This diffusive wave seems to take the form of a restoration of equilibrium throughout the general nervous system, any increase in the activity of a single centre or local group of centres being distributed over the adjacent tracts, until, by a rise throughout the whole connected series, varying according to the proportion between the amount of tension in the primarily excited tract and the extent of the connected system, there is brought about a reduction of the local excitement and a re-establishment of equilibrium throughout the whole system. A sudden sound, a flash of light, a passing whiff of odor, a blow upon the body—any one whatever of the indefinitely great number of stimuli which may affect the senses, will arouse a reverberation throughout the bodily process. Respiration, temperature, blood-pressure, muscle-

reaction and glandular secretion are all disturbed, the perturbation aroused gradually settling down again towards the normal, only to be thrown into fresh excitement by the succeeding stimulus.

The whole complex of physiological functions is thus in a constant state of ebullition, upheaval and subsidence following each other in ever fresh succession. The state is one of endless becoming, the equilibrium approximated to being constantly disturbed by fresh increments of stimulation. The delicacy and responsiveness of the whole system to such changes of nervous tension, whether due to sensational or to ideational stimulation, is marvellous. It is not confined to a group of functions adjacent to, or obviously connected with, the organs primarily excited, but extends to the most obscure and apparently unrelated set of functional modifications. There seems to be little apparent connection between the subjective feeling-tone and the state of expansion in the pupil of the eye, yet the latter is found to fluctuate in a manner which indicates the most intimate relation with the changes in emotional condition. It is natural to expect that rose perfume or the smell of new-mown hay should cause free and deep respiration, and that we should catch the breath instinctively at the first whiff of assafœtida; but that all odors, pleasant and unpleasant, and indeed every slightest sensational stimulus, should closely and markedly affect the reaction in the foot when the patellar tendon is struck, is both unexpected and surprising. Such phenomena point to a unity in the nervous system, and suggest the probability that every process and function of the body, however obscure and apparently unconnected with the mental attitude, and with the greater physical changes popularly associated with it, is still intimately concerned in those atti-

tudes and changes; and that the modifications in any one of them might be selected as an index of the successive changes in the attitude.

To take the group of phenomena last referred to as a more detailed example; the patellar reflex is constantly varying in strength with changes in the condition of the conscious subject. When, in a state of physical and mental quietude, the average of a long series of experiments repeated again and again upon the same subject, is taken—though the individual reflexes in the series vary greatly and continually—it is bound to be remarkably constant. This "normal" average is taken as a standard with which to compare the results of stimulation under changed conditions which are then introduced. It has been found, now, that concomitant movements, such as clenching the fist, increases the reaction six-fold—in my own experiments more nearly ten-fold—while the mere thought of the movement quadruples it. The ringing of a bell, a flash of light, a step on the stairs, the voice of a person in the room—any stimulus of the senses—increase it to several times the normal. In such experiments it has been found that significant stimuli, those attended to involuntarily, and, in a less degree, those voluntarily attended to, produce a much greater effect than those which are devoid of interest or habitual. The rattle of traffic upon the street produces much less effect—though a hundred times more voluminous—than a whispered sentence at the other side of the room, which attracts the subject's attention. This constantly varying condition of the reflex and its strong reinforcement by simple stimuli, suggests that in its changes are represented not only the continual flux of emotional attitudes in the mind, but also the incidence of all sensory stimuli, whether

particularly attended to or not.

The effect of the stimulus varies inversely with its habitualness. A novel stimulation produces most marked effects. As it is repeated the strength of the reaction wanes until it has passed beyond the threshold of recognition. This is to be expected; the back-ground of conscious life is never a blank, a silence, but a continuum of sensations which, from their lack of interest for us, pass unnoticed. Upon this confused and colorless surface noticeable sensations of greater or less novelty are continually falling, each occupying consciousness and producing physiological changes in proportion to its interest and its novelty. As the one or the other wanes the stimulus loses of its effect. A stimulus which is not in itself interesting may become so if it have the character of novelty; it may lose that character without its effect decreasing, if it retain a strong interest for us; but if it lack intrinsic interest, then its effect wanes in proportion as it becomes habitual.

This is but one series of changes selected at random as an illustration. Dilatation in the pupil of the eye, the character of the respiration, blood pressure and distribution, glandular activity, the electrical condition of the skin—any one of these might have been selected instead to serve as our aesthesiometer. Throughout the organism, therefore, there is set over against the complex of sensations of which moment by moment we are conscious, a very extensive and complicated series of alterations in muscular tonicity and in physiological function, which corresponds in the most intimate manner with the successive changes in consciousness and the point especially to be observed—it is urged at length in the succeeding section—is that the sensations arising from these induced functional changes react upon the

original sensation and affect its character. The primary sensation does not stand alone, it is embedded in a mass of these organic sensations, which, though obscure and usually wholly unlocalized, nevertheless enter as significant elements in the make-up of the total consciousness of the moment.

III.

This, then, is the next fact to be noted; that the results of these functional activities fuse together and appear in consciousness as a tone of feeling which suffuses the original sensation and gives it an emotional overtone. The quality of much of our emotional experience derives from the muscular complexes and physiological changes taking place contemporaneously with the emotion felt. This fact was first fully dwelt upon by Lange and James. We know, what has been referred to in the preceeding section, that the condition of the body, both massively and in little, is constantly changing, that the complex of muscle-tensions throughout it, the character of the respiration, with all the muscular and visceral sensations depending upon it, the temperature of the body, the heart-beat and distribution of the blood, with an indefinitely great number of other processes, are never for two succeeding instants the same. Nor can there be any question that the great mass of these changes—it may be all—are represented in consciousness. The form in which they enter may be disguised, so that their presence appears only as an utterly obscure tone which we do not in the least degree connect with any physical origin. But the fact that we do not recognize the sensational character of certain elements of consciousness, nor the physical source from whence they spring, is no proof that the results of these

functional processes are not effectively present in the constitution of the momentary consciousness.

"*Every one of the bodily changes, whatsoever it be, is felt, acutely or obscurely, the moment it occurs*..... Our whole cubic capacity is sensibly alive, and each morsel of it contributes its pulsation of feeling, dim or sharp, pleasant, painful, or dubious; to that sense of personality that every one of us unfailingly carries with him. It is surprising what little items give accent to these complexes of sensibility. When worried by any slight trouble, one may find that the focus of one's bodily consciousness is the contraction, often quite inconsiderable, of the eyes and brows. When momentarily embarrassed it is something in the pharynx that compels either a swallow, a clearing of the throat or a slight cough; and so on for as many instances as might be named."(James). That a great mass of such elements enters into consciousness forming a body of sensation, no one, of course, denies. The necessity lies only in pointing out that though we all do notice these things, and though they cannot be fewer than we know them to be, yet their influence may be much more prevalent, their effects greatly more extensive, than we are even likely to suspect. And all that we know of the organizing process furthers this belief. A physical change which is distinctly and specifically connected with a particular sensation, is never confused with other things, nor taken to be other in its origin than it is. A tooth-ache, or a cut finger, or a spoonful of lemon-sherbert, or the cold ache it produces down there if it does not melt quickly enough, are not confused with ideal longings or remorse of soul. We recognize the sources of our happiness or misery at such moments and give the sherbert and the tooth their due. These things form a core

of thoroughly sensational consciousness which we do not mistake even though it be heavily surcharged with an emotional quality, a feeling-tone of pleasant or unpleasant character.

But as these physiological changes grow more diffused or subtle, the definiteness of connection between physical fact and fact of consciousness becomes weaker and more vague. The sensations tend to fuse together and appear in consciousness only as a tone. And this fused sensational tone, unreferred to its bodily origin, and appearing independently in consciousness as a purely mental fact, is an important element in emotion. The character of these elements of the mental complex is, indeed, not recognized by us in the experience unless our attention be specifically directed to the task of detecting them. In many cases, further, this observation is itself impossible, there being no means by which we can, introspectively, connect the feeling with its physiological coefficient; but we may, in other cases, detect the sensational quality of mental factors whose character usually escapes us. And this should predispose us to grant a still larger province to these elements in consciousness, even though we do not hold with the theory which says that "each emotion is the resultant of a sum of elements, and each element is caused by a physiological process of a sort already well known."

It is, however, true that the tendency here is for the organic-change-reflexes, as they become more and more obscure, to pass from the sensational into the emotional sphere; and that they are both permanently effective in producing a distributed emotional undertone to our mental condition, and from moment to moment active in giving body to transient accesses of feeling. "Does it not seem,"

says Henle (quoted by James) "as if the excitations of the bodily nerves met the ideas half way in order to raise the latter to the height of emotions?' That they do so is proved by the cases in which particular nerves, when specially irritable, share in the emotion and determine its quality. When any one is suffering from an open wound, any grievous or horrid spectacle will cause pain in the wound. In sufferers from heart disease there is developed a psychic excitability which is often incomprehensible to the patients themselves, but which comes from the heart's liability to palpitate. I said that the very quality of the emotion is determined by the organs disposed to take part in it. Just as surely as a dark foreboding rightly grounded on inference from the constellations will be accompanied by a feeling of oppression in the chest, so surely will a similar feeling of oppression, when due to disease of the thoracic organs, be accompanied by groundless forebodings. So small a thing as a bubble of air rising from the stomach through the æsophagus and loitering on its way a few minutes and exerting pressure upon the heart, is able during sleep to occasion a nightmare, and during waking, to produce a vague anxiety. On the other hand, we see that joyous thoughts dilate our blood-vessels, and that a suitable quantity of wine, because it dilates the blood-vessels, also disposes us to joyous thoughts. If both the wine and the jest work together, they supplement each other in producing the emotional effect, and our demands on the jest are the more modest in proportion as the wine takes upon it a larger part of the task."

One cannot help feeling the force of James' contention, and the importance of the matter he is emphasizing when he urges the vital point that "If we fancy some strong emotion and then try to abstract from our consciousness of it all the

feelings of its bodily symptoms, we find we have nothing left behind, no "mind stuff," out of which the emotion can be constituted, and that a cold and mental state of intellectual perception is all that remains."

We are prone to overlook this fact. Our attention is constantly turned towards the object of our emotion and the practical outcome of the emotion as an element in our social living—it is so much a value, a significance, for us—that we neglect the actual make-up of the emotion as a psychological fact. And the value of pointing out the nature of the emotional wave is that it recalls us to an examination of the emotion itself, instead of confining our task to an appraising of it in terms of its value or significance. I quote further from James in illustration of this side of the matter: "What kind of an emotion of fear would be left if the feeling neither of quickened heart-beats nor of shallow breathing, neither of trembling lips nor of weakened limbs, neither of goose-flesh nor of visceral stirrings, were present, it is quite impossible for me to think. Can one fancy the state of rage and picture no ebullition in the chest, no flushing of the face, no dilatation of the nostrils, no clenching of the teeth, no impulse to vigorous action; but instead, limp muscles, calm breathing, and a placid face? The present writer, for one, certainly cannot. The rage is as completely evaporated as the sensation of its so-called manifestations, and the only thing that can possibly be supposed to take its place is some cold-blooded and dispassionate judicial sentence, confined entirely to the intellectual realm, to the effect that a certain person or persons merit chastisement for their sins. In like manner of grief; what would it be without its tears, its sobs, its suffocation of the chest, its pang in the breastbone? A feelingless cognition that certain con-

ditions are deplorable, and nothing more. Every passion in turn tells the same story. A purely disembodied human emotion is a nonentity. I do not say that it is a contradiction in the nature of things, or that pure spirits are condemned to cold, intellectual lives; but I say that for us, emotion dissociated from all bodily feeling is inconceivable."

I cannot hold altogether with the author in this assertion. It seems to me quite possible that mental states may exist, which are legitimately emotions, without any bodily expression as here meant. The two forms of consciousness set over against each other are the emotional and the intellectual; and the contention is, as I understand it—if I may put it in these terms—that the emotional phase is always supported by a bodily reverberation, involves physiological changes extending beyond the central nervous system, while the intellectual activity of consciousness is confined—as regards its physical coefficient—to nervous changes in the chamber of the brain itself. But this is not strictly the case; the intellectual, as well as the emotional, has a real bodily expression extending throughout the whole organism. The purest mathematical calculation tips the heels of the tilting-table up, changes the character and rapidity of the heart-stroke, alters the nature of the respiration, increases the temperature of the body, and reduces the volume of all the extremities.

We may say, if we like, that there is no purely intellectual form of consciousness, that the most calm and dispassionate mental state is accompanied by an overtone of emotion which these peripheral changes really express. But we must admit that the physical side of every form of consciousness extends beyond the brain changes, and involves a bodily reverberation as real as that upon which the crudest

emotion rests. And on the other hand it is quite conceivable that the limits of the peripheral wave may be reduced beyond the bounds of that which accompanies typical intellectual action without our being compelled to deny to the corresponding fact of consciousness the name of emotion. Indeed Prof. James calls attention specifically to this in a subsequent note: "Under all these conditions"—absences of the reverberatory wave—"one may have the liveliest subjective feelings, either of eye or ear, or of the more visceral and emotional sort, as a result of pure nerve-central activity, and yet, as I believe, with complete peripheral repose."

We cannot separate the two classes of facts as central, and central + peripheral. If they are to be defined in any such way it must be by a specification of the particular forms of alteration involved in the one phase of activity or the other. And as, on the one hand, a state which we all agree in calling intellectual is thus accompanied by wide-spread bodily changes, so it may be that a state which we rightly still call emotional may be characterized by changes which are no more strongly or predominately extracranial than are those which accompany intellectual changes.

This delimitation, however, if not true in extremity, is surely so as the expression of a tendency. If we make one broad practical division, it will be between these two, of emotional experiences as involving bodily expression and finding their warmth and reality in the extent and intensity of the processes involved, and of the intellectual as marked by the absence of such disturbances and appearing as independent mental facts not relying upon any bodily support for their peculiar quality. We know that the more primitive and savage races are given to stronger and more violent expression of their mental state than the more cultured peo-

ples; that the emotional type amongst us is recognized and set over against the intellectual by virtue of the freer and more varied bodily expression which is characteristic of it; that in our own experience the more intensely felt emotion is that one which involves the more extended and violent bodily changes; and that our cruder emotions are inseparable in thought from the physical changes which accompany them, while, as they grow more intellectual, this peripheral element successively declines until in the more subtle and refined forms, there is almost as little expression as marks the most abstract speculative thought.

IV.

The question is greatly a practical one, as to the extent to which a certain process has been carried, namely, the reduction of the absolute amount of reaction consequent upon any given stimulus, ideational or sensational, a process which marks the course which evolution has followed upon its intellectual as well as its emotional side. The primary tendency of any stimulus, whether from centre or periphery, is to express itself in a motor reaction, violent in proportion to the intensity of the stimulus. But if we assume that the final determinant of what the quality of action shall be is its capacity to promote the maintenance of life in a condition of the highest well-being and efficiency, then those actions only which are most calculated to forward this end will survive and become organic; the tendency will be towards the establishing of systems of reaction which are beneficial, to the exclusion of those which are either useless or directly harmful. Action upon all occasions and in all directions, is wasteful. There is only one thing which, in the given circumstances, it is right to do, and all of the indefinite num-

ber of other things which might be done, are wrong and self-destructive. Here is at once a factor reductive of the amount of reaction. If the particular set of reactions which are right can be performed at once without the arousal of other inappropriate sets, the gain is evident. Thought, or, let us say, brain-action, is a means for the obtaining primarily of the appropriate reaction without the wasteful working over upon the occasion of each stimulus, of all the possible forms of reaction at random, until the right one is hit upon. This is, perhaps, the most general thing which can be said of the nature of the thought-process, that it is a method of economizing action, a short-cut from stimulus to appropriate reaction by the representation in little of the various possible modes of action, without the cumbrous repeating of them at length in motor terms, until the right is found and allowed to proceed to full effect in action. It is a learning to use contracted symbols instead of the things they represent; and the developed man—or the developed being—is he whose symbols are compact, swift, and effective. The contracted phases are exemplified, say, in two persons who are present when the dress of a third takes fire and renders her powerless to save herself. The one is overcome by the shock and can do nothing. She is paralyzed with fear and horror and sympathetic anguish; her heart stands still, her knees tremble, her mind is benumbed. If she does not remain transfixed, she wrings her hands, or runs about distracted, making a series of reactions which are entirely purposeless and ineffective. The other, seeing the like sight, while having as great an interest at stake in saving the endangered life, retains her coolness and self-possession. She is still for a moment, as all the possible consequences flash through her mind. At the same time she is looking

around for some means of extinguishing the flames, and catching up a wide rug from the floor she has flung it around the burning garments and wrapped it close about them, and in a few moments the fire is out and the danger past. In the one case there is a maximum of action with a minimum of purpose about it, in the other a minimum of action with a maximum of purpose and effectiveness.

And this economizing is characteristic of all phases of our conscious life. It is represented in the schematizing of our thought-objects instead of developing them in their full significance every time we have occasion to use them in a thought series—it is represented here, I say, quite as much as in the economizing of motor-reactions by proceeding directly to the appropriate adjustment instead of circuitously arriving at it after a series of aimless responses.

We think of a person, for example—I mean, not as a thought-topic, but as a single element in a connected flow of ideas. How is this person, or how may he be, ideally represented? The person—what he means for me as a thought-topic—is not completely present in any way. He may be thought of in any one of an indefinite number of different fashions, by significant or insignificant attitudes, by visual or auditory or muscular cues, by the remembrance of some characteristic attitude or sentiment, or by connection with some habit or occupation, or in some surroundings which entered into intense combination with him in our experience. The material of our thought may be the image of some merest accessory which, simply because it was contiguous to the person in some previous thought-complex, suffices to represent him in this. Thinking constantly involves these proxy processes, these givings of power of attorney to other factors as agents in the present

demand. All we need is a cue, a working symbol, which will enable us to pass on to some desired conclusion. Our thinking is a schematizing by significant elements, each of which fulfills its function if it serves to carry the mind on to the next position in the series, like a chain of ball-players whose business, individually, is to catch the ball and pass it on to the next player.

Our full conception of any object is a complex thing which we never get in any single presentation of it. It is a "construct" of many past experiences which we piece together by a series of memory-syntheses. Any individual presentation gives us only a very few of the whole number of elements of which we know the thing to consist. And not only are we not actually given the object in its complexity upon this or that occasion of its entering into our thought—that complexity is often not even suggested to us. What we have in any individual case is, first, the sensation, which the presence of the external stimulus occasions; then the association with this of certain other ideational factors which are specifically called up by the present sensation, and beyond this a completely undefined consciousness that still other elements exist. The particular elements contained in the sensation do not come alone; they appear suffused by an overtone of consciousness which gives them significance beyond themselves. We feel at the moment that we could add all those other things to the present meagre group which represents the object; but they are not in the instant specifically present, only the vague association of this group with, or rather the feeling that it is related to, an indefinite number of revivable but unrevived ideas, is there.

I conceive that the utmost astonishment might seize

upon one were he able to look into the psychological worlds of other people and see the materials of which they are composed, and the scenery which they present. There are many ways of thinking any individual thing, and my way may be as different from yours as a pound of candles is from the smell of a rose. Your mental world and mine may be amazingly unlike in regard to the material or elements which we make use of in getting to our conclusions. The mere formal sound or sight of his name may serve to recall a person to me on this occasion; on that, the face of the individual may come up, or a single feature or expression of it, or the whole attitude of body, or some peculiarity of gait, or trait of gesture, or an habitually worn garment; or the visual image may be more or less submerged in other factors customarily associated with the person, and the thought of him be more of the work he does, the places in which he has been seen, or the society and occurrences with which he has been connected. The thought of any complex object is characteristically this of the recall of certain specific elements, with an added emotional attitude. Thus my thought of a particular teacher may be a fleeting memory, visual and auditory, of the class-room in which he lectures, the ranks of students filling the forms, the dimness of the light, the peculiar odor pervading the air, the desk, the figure, the voice, and a fringe of vague associations relating to the questions he is concerned with, and the experiences which have been connected with this particular course of study. The number and definiteness of these elements may vary within extremely wide limits, and often they are of the meagrest, the phase of consciousness consisting almost wholly of the emotional attitude involved. The way in which I think one particular person, for example, so far as I can

analyze my experience in memory, is by a feeling of repugnance accompanied by a contraction of the brows, a set of the muscles about the face, with a varying visual representation of a nose and brown moustache discolored by tobacco juice, or the sound of a harsh voice behind a post office wicket; but these last elements are variable, weak, and fleeting, and seem often to be wholly absent. The permanent and predominant factor is always the emotional movement of dislike.

What I wish to insist on here is simply the fact that while the representation of, say a person in our mind, is often a predominantly intellectual one, which is only tinged with a glow of feeling, and while we should reject all but such a conception as this when challenged for an adequate representation, we do, nevertheless, in the flow of thought frequently make use of representations in which the intellectual element is of the meagrest, and make shift with symbols which no more mean the objects for which they stand than they do any one of a score of other objects with which they might similarly be connected.

The only definite thing I have been able to seize upon in my thinking another person is a particular contraction of the muscles of the neck and an inclination of the head backward over the left shoulder. That muscular complex, with a certain tone of added feeling, stands to me for that person, and—though I can, and often think, of him in other fuller, more intellectual and adequate ways—I recognize and accept it as his mark. Yes, I say implicitly, that is that person. It is a coin which represents his value in my thought exchange. And this, in the rush of thinking, is all I require, it is a symbol which enables me to pass on to a new thought, a new mental situation.

As to their genesis, it is probable that these are particular attitudes which accompanied some previous fuller and more objective way of thinking the person, and hence are now made use of to stand for that richer and truer way of realizing him. It is a schematic method of work; I use algebraic symbols instead of the things they represent, with the back-ground consciousness that they do represent these other and more concrete things.

Upon this quality of the mind depends, at least in part, the richness or poorness of one's imagination, the concrete variety and wealth, or poverty and meagreness of our mental scenery. The thought of an object, it has said, may be a group of visualized letters, or the reverberation of a name, or the tones of a voice, or the representation of a face, or figure, or gesture, or expression; it may consist of a simple muscular tension, or nod of the head, or contraction of the brows, or thrill of emotion; or it may be the recurrence of a particular group of ideas, opinions or sentiments—in short any imaginable thing which has been connected in some habitual or significant way with the person remembered, and which has come to stand for that person when in our hurried moments we have been unable to think out his attributes at length. There seems to be no possible limit to the variety of forms in which a thing may thus be presented to the mind.

My own working memory of my father is almost invariably a visual one of a characteristic raising of the left eyebrow and a gleam of the eye beneath. Of a neighbor, who lived near by, it is sometimes of a gusty laugh, sometimes of a high-bridged, crooked nose and two keen kindly blue eyes, but more frequently of part of an arm, a gnarled, large-boned hand holding an old briar-root pipe with a little

tin-cup dangling at the end of a short chain, and a knotty fore-finger pressing the tobacco down into the pipe-bowl. Of another person it is almost always a voice, sometimes speaking, more often ringing out in a free, merry, characteristic laugh. Of another it is oftenest but a name and a particular emotional attitude. Of still another it is—if I may call it so—a spiritual body of sentiments and judgments and moral attitudes, with just the faintest reference to bodily feature or habitual surroundings.

It is unnecessary to add illustrations; these sufficiently indicate what I have in mind. And these things are not confined to our recall of persons, or to any one province of the psychological world; they characterize all our thinking. We have the most varied ways of imagining the same things, we use the most diverse psychological symbols for the same purposes. And could any one of us get a peep into another's world, the objects, the scenery, the inhabitants, the customs which there met his eyes might be as strange and incomprehensible as words spoken in a foreign tongue, or the habits of another race of beings.

What we do have in common is the conclusion at which we arrive, the practical attitude to which these varied phenomena lead. Thought is always purposive, continually employing the present image, or idea, or factor, whatever its character may be, as a means to reach a desired end, a position which lies beyond it. Every thought, that is, is an element organic to a system; its significance does not lie in itself, but in its relation to other elements. We may stop with the mere enjoyment of the idea—that is another attitude of mind. But in thought properly so-called there is a continual streaming. We are never at rest, but constantly passing to new positions, and the present idea will serve if

it afford sufficient foothold for the spring forward to the next ledge. Any sort of a symbol will be adequate if it only serve to carry me on to that new attitude which I desire to reach. Indeed, the very richness and fullness of the idea is for purposeful thought an imperfection, because it stays me in my flight by drawing my attention to itself and engaging my activities instead of forwarding me toward whatever practical attitude may be my goal. And it is perhaps true that those whose thought-imagery is richest and most vivid are not the most effective or successful thinkers. The more the ideas are stripped of those properties and elements which are not suggestive in the line of my purpose, the more schematic and symbolic they are—so long as this simplification does not interfere with their suggestiveness—the better material of thought do they become. The ideal images are those which carry me onward most swiftly and securely in my purpose, that is, which contain all the suggestive elements and none of the superfluous, unsuggestive ones. According to the nature of my present purpose will vary the particular aspects of the things which come up, and, as was said before, what is demanded in our purposeful thinking is not any likeness or adequacy in the ideas themselves, but simply fitness to the purpose of the moment—the capacity to carry me validly onward in my flow of thought.

It is just because consciousness is of this predominately purposeful character, because we are continually in an onrush of ideas with our mind fixed on the goal to be reached, that the nature of the successive stages through which we have passed fails to strike us. The pulse of the moment takes its value and meaning from the preceding and succeeding steps with which it is organic; and the ac-

tual complexion of any particular moment of consciousness habitually escapes us because our mind is turned towards the end and not the means. We may, indeed, be under the grossest misapprehension as to the structure of any individual state. We commonly, in thinking backward over the process, color the particular elements with the tone of the whole thought proce dure; and their imperfect or inadequate character receives a completeness which did not at all exist in the moment when the image occupied the mind. Indeed the very character of the elements present may be mistaken. What I get is what was implied in these, the overtone of unrealized associates which were latent in the image; but the very fact that I used a schematic symbol, and not the more or less fully realized association-complex may have vanished from consciousness. We may feel an implied aspersion in the charge that the object has been represented in so meagre and unworthy a form, and in our indignant denial of the adequacy of this statement of our conception, we are prone not simply to assert that the object means far more to us, which is perfectly true, but also to maintain that its representation in the individual case was of an adequate and not of a make-shift character. Which is so far from being true that it is only when the process stops and the object blossoms out into an independent thought-topic that this fullness and adequacy is even approximated to.

ROBERT MACDOUGALL.

THE MEDICAL COLLEGE AND THE UNIVERSITY.

The advance which has been made by Western Reserve University during the last few years has been so marked that it can scarcely have escaped the attention of even the most casual observer. New departments have been established, and those which previously existed have been greatly improved and enlarged. The growth has been one, not in numbers and financial support alone, but in all that is best in advanced education. Today Western Reserve is entitled to stand as a university, in fact as well as in name, and to be compared favorably with the best universities of the United States. The conception of a university in America has been very different from that which has been held abroad. The terms college and university have been interchangeable, and often the large name has been applied to an institution of learning unworthy of the name of college, whereas schools which have stood first in the United States, both in material possessions, facilities for education and intellectual equipment, have retained the name of college. The general tendency in the American university has been to regard the academic department as the most important. To this department have been given the largest proportion of endowment, the most attractive accessories, the most prominent recognition at commencement, and in many cases exclusive voice in the government,

provided any voice was given to graduates in controlling the destinies of that institution which had given them her degrees.

The question arises if this policy is a wise one, and if it is developing the idea of a university upon lines as broad, as liberal, as influential and as successful as they ought to be. This method of government and action has been based upon the idea that men in the academic department were most interested in the welfare of their *Alma Mater*. It has also been claimed that they were the only men of sufficiently liberal education to entitle them to a voice in the management of the affairs of a university. Whereas there may have been some truth in this position, it must be a truth which is rapidly disappearing, for that university is no longer entitled to the name, which admits to her professional departments men whose preliminary intellectual training and whose professional attainments are not of a sufficiently high order to be an honor to the university whose degrees they bear, and to entitle them to a voice in the management of her affairs. Certainly, it must be a source of strength to a university to have the support, not only of men who are graduates of the academic department, but of those also who are graduates of the departments of medicine, of law, of divinity, in fact of all departments in which the standard of education is such as necessarily to require, of those holding university degrees, a high standard of mental training.

The direction taken by benevolence for purposes of education is difficult to understand. Endowments have been given for the establishment of academic, scientific and theological schools. A good deal has also been done for the endowment of departments of law. Great foundations exist for the training of women. It is a peculiar fact

that very little has been done in the United States to assist in medical education. This is not true in any other civilized country. In Germany and France the faculty of medicine stands upon the same plane as the faculty of law and the faculty of arts. The professors in the departments of medical instruction receive salaries for teaching and for clinical work. In the United States, on the other hand, there are few schools of medicine having any endowment whatever, and endowed clinical chairs are almost unknown. Clinical instruction is given for a very paltry remuneration, if in fact it be paid at all, while clinical work in hospitals is done gratis. When it is remembered how anxious the sick are to recover their health, how solicitous friends are over the illness of their loved ones, and that "All that a man hath will he give for his life," it is almost incomprehensible that so little has been done by public spirited men and by universities to increase the facilities of instruction in the department of medicine. Surely, when we consider that medical education at the present time pre-supposes thorough preliminary training, that the course of study is four years, that for a well trained man subsequent hospital experience is an absolute necessity, and that the best trained men must supplement this by study abroad, it will be seen that no other department of education, whether professional or otherwise, demands so much in time, in money and in physical requirements. The extended requirements of medical training in Western Reserve University will be still greater after the year 1901, since beginning with that year no student will be admitted to the study of medicine who has not already completed the Junior year in the academic course of a recognized college.

The object of this paper is not, however, so much to

present the needs of medical education at the present time, great as these may be, as to emphasize the desirability of placing all departments of the University in proper relationship to each other, and making all to feel that they are interested in the affairs of the University as a whole. It would seem desirable that the best relations should exist between Adelbert College, the College for Women, the Medical College, the Dental College, and the Law College, and that members and students of all faculties should feel that their interests are closely associated. Important steps have been taken by the Medical Faculty to this end. The first is that men in the Senior year at Adelbert College are permitted to elect certain studies in the first year of the medical school, so that they are enabled thereby to complete the combined eight years course of the two schools in seven years. A second step has been taken to secure for the men in the medical department instruction in biology and physics by the professors of Adelbert College, the instruction being given in the laboratories of these departments upon the Adelbert campus. A still further step is the vote of the Trustees to grant to men coming from other institutions at the close of their Junior year the same privileges with reference to the study of medicine as are granted to the Seniors of Adelbert College.

The question arises, cannot more be done to produce closer affiliation between the various departments of the University than exists at the present time? Is it not possible that certain lectures might be given in the Medical department to members of the other departments along the lines of physiology and hygiene, which would be of interest and also of great additional value? Might not the department of Law furnish lectures upon certain constitu-

tional and international questions which would be of great value to the student? Might not the instructors in the College for Women offer lectures of unusual interest in Art, Literature and History?

The time is past when a man in professional life should be satisfied simply with his professional attainments. Life has interests broader and more elevated than those which pertain to the narrow field of one's profession, interests which may profit the busiest professional man, provided he has had open to him those doors which should, in a great university like Western Reserve, beckon the students, while gaining technical instruction, into fields of broader culture and refinement.

It has been the policy, as has already been said, of most colleges which have grown to universities, to shower their favors upon the members of the academic department. For these have been provided dormitories, libraries, gymnasia, chapels, in fact all those things which go to make university life attractive, and which tend to endear to each student his *Alma Mater*. Would it not be wise to remember that men in other departments similarly treated might be equally benefitted and might retain for that institution which gives them not only education, but her affectionate and protecting care the same allegiance and enthusiasm which is now expected from the academic student alone?

To adopt thus a broad and liberal policy would, at the present time, be wise for the University. For each department to further development along such lines would be to add to its own strength. Any movement which emphasizes the various departments of the University, as distinct in interest from the University as a whole, is a step backward. For every department to emphasize the fact that it is a part

of the great whole, participating in the equipment of other departments, both material and intellectual, is at once to increase its strength and reputation. The Board of Trust and the President have done much to foster this idea. They could with wisdom do still more. By making every department feel that it had the support of the officers of the University in caring not alone for its intellectual and material development, but also for the comfort of its students, they would awaken in every student a feeling of loyalty and enthusiasm which would go far toward spreading the influence of the University, and widening its constituency. Some of the greatest universities of the United States have signally failed to gain from their professional departments the added support and influence which they ought to have. Western Reserve University ought now, while she is still to a degree in her formative period, and before tradition and precedent shall have rendered such a course difficult, institute such methods of government and manifest such solicitude for each department as shall secure for her the affectionate memory and support of every one of her Alumni.

DUDLEY P. ALLEN.

NOTES ON THE PRESENCE OF AMOEBAE IN THE CELLS OF SPIROGYRA.

Spirogyra bellis, taken from a running stream in November, was placed in jars of water in the laboratory, and some specimens were kept in strong light, others in darkness. At the end of fifteen days when the former were again examined the filaments were covered with bacteria which were collected in nodules on the cell walls, while each of the cells contained, as a rule, a single small amoeba, or rarely two amoebae. By careful examination the amoebae could be clearly demonstrated as lying within the cells, on the inner side of the chromatophores, and could be watched in their slow movement along these chlorophyll bands from one end of the cell to the other. Staining with iodine and other reagents confirmed the observations of the position and character of the organisms within the spirogyra cells. Two important questions are suggested by this relation of the animal cell to the plant. How did these amoebae penetrate the cellulose membrane which encloses the spirogyra cell and is without marked pores, and secondly, is this a case of symbiosis? No perforations in the cell wall could be discovered, but it is possible that the nodular masses of bacteria on the outer surface may have marked points of weakness, and that a very small amoeba might have gained admittance through an opening thus made. As the plant was daily watched from this time on, destructive metabolism was gradually set up first in the chromatophores and then in the

cell protoplasm, showing that no symbiosis existed from this time. The same phenomena followed more slowly in plants kept in the dark. The cells assailed, first by the amoebae from within, were attacked also from without by hosts of infusoria, which finally found access to the interior of the cell walls, and completed the work of destruction, devouring every vestige of the cell protoplasm, so that nothing but the empty cell walls remained. At the latter stages of the destruction of the spirogyra cells the amoebae had disappeared, and the interior of each cell was a swarming mass of infusoria and bacteria. The dissolution of this plant was complete in about thirty days, and the infusoria finally gave way, in turn, to the bacteria. Cienkowski has figured and descriped a species of Vampyrella (Verworn, Allgemeine Physiologie), which first bores the walls of a spirogyra cell, and through the opening thus made draws the cell contents out into its own body. It rather absorbs a part of the cell membrane, and thus makes an opening. The species of amoeba which we have been describing may do the same thing, although this was not observed. Unlike the Vampyrella spirogyrae, however, it actually enters the cell, which it then has at its mercy and then begins the work of destruction.

CARL B. JAMES.

ABDOMINAL PREGNANCY AND HISTOLYSIS OF THE FOETUS.

An interesting case of secondary abdominal pregnancy in the cat, with partial absorption of the foetus within the body cavity, was brought to my attention by two of my students in mammalian anatomy.

When the abdominal cavity of this animal was opened it presented a very singular appearance. The whole mesentary and the omenta, particularly the great omentum, which screens the intestines, were covered with innumerable filaments two or three millimeters in length, and filled with an irregular mass of nodules. The omenta were perforated throughout with openings of various sizes, forming a rather coarse network, and there were abundant abnormal adhesions. At one side of the great omentum, next the stomach, the membrane was clouded with a black pigment.

The primary cause of these abnormal conditions was the rupture of the right horn of the uterus, a possible result of injury, and the liberation of at least two embryos into the abdominal cavity. The embryos developed in the other branch of the uterus were probably born in the usual manner. The rupture of the uterine wall, which occurred about one inch from the proximal end of the tube, was concealed by a strong adhesion to the body wall. The embryos thus admitted to the body cavity had been gradually shaken to pieces, and the fragments scattered, the action of gravity tending to spread the greater part of them over the omenta. These delicate membranes, which had thus been pressed

against the offending bodies by the viscera had suffered innumerable slight injuries which might account for the abnormal fenestration and adhesions. At the same time the histological elements of the membranes had been stimulated to abnormal growth, and from innumerable foci filaments had grown out, giving a characteristic appearance to the omenta and messentary. Every fragment of the embryos had become enclosed by the proliferating epithelium and connective tissue, which held it fast upon that part of the omentum on which it had become stranded. These were the nodules spoken of above, the smaller ones containing but a single bone, the larger a skull or mass of promiscuous fragments.

The omenta, when properly treated for microscopical study, are found to have become abnormally thickened and reticulated. Swarms of nuclei which probably represent both endothelial and connective tissue cells are everywhere present, while at short intervals there are proliferating centres dense with cells, resembling lymph follicles. From such islands of lymphoidal tissue the peculiar filaments are derived. These are composed of imperfectly differentiated tissue, and sections of these embryonic fragments showed that the foetal tissues had been replaced as fast as absorbed by proliferating cells derived from the membranes. Thus one of the long bones of an embryo was found completely isolated and imbedded in the omentum by overgrowth. Sections through this entire structure presented few or no degenerating nuclei. The soft foetal tissues had been replaced by the proliferating cells. The normal elements of the marrow cavity, Haversian canals, and periosteum, had been entirely replaced by foreign cells which had migrated from the membranes. The bone corpuscles had disappeared

leaving the lacunae empty, and the only unchanged portion of this part of the dismembered foetus was the unabsorbed bone matrix. It seems hardly possible that the hard bone could ever have been completely absorbed in the life time of this animal.

Intra abdominal birth had thus led to the following changes: (1) abnormal development of peritoneal structures (thickenings, adhesions, fenestration in the membranes, and to tag-like outgrowths over them); (2) fragmentation of the foetus, and attachment of the parts to the omenta by overgrowth, the result of extensive proliferation in the constituent cells of these membrames; (3) the more or less complete replacement of the soft embryonic tissues by the proliferating cells.

The details of these processes will be illustrated in a fuller paper.

FRANCIS H. HERRICK.

A COMMONLY ACQUIRED CHARACTER WHICH IS NEVER INHERITED.

One cause of the conflicting testimony regarding the inheritance of acquired characters is the difficulty of deciding whether the character in question appeared in the individual after birth through somatogenic changes, or whether it is the result of prenatal or blastogenic variation. If a man loses a limb, or if a bone is crushed so that it becomes deformed, or if any mutilation whatever occurs in the body, this secondary condition has the nature of an acquired variation. Some cells of the body have changed. The question thus naturally arose whether correlative changes occurred at such times in the germ cells, leading to the reproduction of similar characters in the next and succeeding generations. If this were the case such an acquired character would be inherited and would lead to the modification of species. No student of the natural sciences need be reminded that this idea forms the nucleus of the celebrated theory of Lamarck to account for the origin of species. Good test cases of this principle have been rather difficult to find, and while no exaggerated importance is attached to the simple one which I am about to notice, it is certainly interesting, and is free from any of the difficulties pointed out above.

Experiments on the mutilation of animals carried through a long series of generations have given uniformly negative results, and general considerations should lead us to expect nothing else. The fact that animals and plants preserve their characteristic forms and symmetries from age

to age, in some cases even from one geological period to another is sufficient evidence that acquired characters of this kind are not inherited and cannot be. The negative evidence from experiments of man, extending over relatively few generations, are of little value compared with the countless experiments which nature has practiced not only accidentally but with regularity. The example of this kind to which I wish to call attention is the deformation which takes place in the sternum of young perching birds, which has been taking place not during a few generations only, but through the whole course of the later evolution of these animals. The sternum of heavy perching birds belonging to the order Gallinacei, which includes the domestic fowl, the turkey and their wild ancestors, as well as the grouse, has the characteristic keel shape, and for some months after birth is semi-cartilaginous, and consequently soft and yielding. The skin comes close to the keel, which is applied like a blunt knife edge to the hard perch, and the transverse line of pressure, caused by the weight of the body which is not supported by the legs, soon produces a deformity lasting through life. A cushion shaped enlargement may be developed as a result of this stimulus, or the keel may be bent or twisted in a variety of ways. The mechanical conditions which are present render some such deformity inevitable. At the end of each generation any individual variation thus acquired is completely effaced, and the young of the next generation begin life with the sternum normal. This acquired variation is not inherited.

The keel of the sternum in all carinate birds has probably arisen in correlation with the evolution of the pectoral muscles which are concerned in flight. If we assume that the variations which have rendered such a result possible

were uniformly of a blastogenic character, the inheritance of somatogenic changes at the same time would have rendered the development of a vertical keel impossible.

In regard to the general Lamarckian principle we might infer that what is true of one organ is true of another, the person or individual being an assemblage of mutually correlated organs—that what is true of the sternum would be true of the foot. The processes of nature are probably too complex for such simple rules, and all that we can say is that in this, as in many other known cases, the inheritance of acquired characters does not occur. Nothing seems to be gained by assuming that the germ cells are affected by every somatogenic change even though the resulting variation is not perpetuated in its original form.

FRANCIS H. HERRICK.

AN AMERICAN LITERATURE AND THE "GREAT AMERICAN NOVEL."

It is often amusing to note with what alacrity the so-called critics of the American press delight in extolling the importance of American literature. But it is more than amusing to read the protracted attempts of these same critics to saddle every ephemeral piece of romance dealing with the events of American history with the pompous title, "The Great American Novel." The Great American Novels are becoming so numerous that some progressive critic will soon have to invent a new title, possibly "The *Greatest* American Novel."

We find even in certain historians of American literature, from whom we have a right to expect soberness and soundness of critical judgment, this tendency toward inordinate exaltation of the merits of our literature. It is rare that the limitations are set before the reading public in a clear and comprehensive manner. While it is the duty of every capable American citizen to do all in his power to cherish the national literary spirit, which was called into life some hundred years ago, he is not expected to give indiscriminate praise to all so-called literature.

No one can close his eyes to the fact that we have done a noble work in literature during the one hundred years of our (literary) existence. In fact, we have accomplished fully as much as could be expected under the circumstances. A literature, like a nation, is the growth of centuries. A nation does not suddenly spring into existence, fully devel-

oped, like Minerva from the brain of Jove. The greatest nation of the world today, England, has required more than a thousand years of almost unbroken development to reach its present condition. The grandest modern literature is the literature of England, and its development has come down the centuries hand in hand with the growth of civilization and national spirit. The greatness of England or France or Germany in literature or anything else is the greatness of centuries of historic growth based on still other centuries of inspiring traditions and legends. America is not yet old enough to have an interesting background of legends and fairy lore. The few legends she has are connected, for the most part, with the aboriginal inhabitants, and not with the modern American people.

Although the American nation in its inception had the advantage of drawing upon the accumulated civilization of Europe (especially of England) from the centuries of the past, it also had the disadvantage of beginning with traditions, ideas of government, religion, and the like, which were thoroughly European. And whatever of literature the American Colonies produced, was really nothing more than the literature of England translated to the wilds of America. I say "of England," because, however extensive the settlements from other countries were in the first years of American life, none of them produced a literature independent of that of England. Moreover, these dependencies had virtually become amalgamated under English direction before the outbreak of the Revolution.

Aside from traditions of education, government, and religion, a still more powerful obstacle has hindered the development of a distinctively American nationality and literature. The young American nation employed the language

and speech of older, more influential England. This seems to me to be, to the present day, the most difficult question to solve in the production of a strictly national American literature, a national literature such as England, France or Germany has. So far as I can now recall, no younger nation continuing to employ essentially the same language as the stronger, parent nation, has ever succeeded in developing independent, national literature. The most noteworthy instance of such a relation in modern times is that of Germany and Austria (proper). In the broad field of European literary activity, who ever speaks or writes of an Austrian language or an Austrian literature? Who ever thinks of Grillparzer, or Lenau, or Rosegger as Austrians? They speak, or did speak, the German language; their dramas, poems, and stories are clothed in the German language. And this is a most momentous fact, even though the social conditions which are described in this literature may be more characteristic of Austria than of Germany, or any other part of the world. Of course, we have, to some extent, a shifting of the centre of literary influence from Vienna, the former capital of the German empire, to Berlin, the capital of modern united Germany, and in this respect the case of Austria and Germany is not parallel to that of America and England.

Distance from the centre of influence and isolation have doubtless contributed no little toward emphasizing the national note of American literature, in spite of its community of language with England. In addition to these peculiar conditions of the American continent, which do not exist in, e. g., Austria, we must, of course, consider the gradual development of the spirit of democracy in America. While the national spirit of Austria has developed un-

der monarchy, and restraint of democracy, that is, along the same lines as that of Germany, the American republic has from the first been drifting away from the European idea, even from the comparatively free spirit of the English nation. These influences, therefore, have been the chief instruments in building up whatever of a distinctive American spirit we have. These influences are also sufficient to make the English literature of America more American than the German literature of Austria is Austrian. Nevertheless these strong national characteristics are not sufficiently powerful to override the influence of a common language, common ancestry, common traditions. Moreover, the American nation is not yet, and probably never will be, so strong and important in comparison with England as to become the centre of influence for the English speaking world.

There are besides these external obstacles to distinctive nationality in American literature, others inherent in the American people itself—its social and political institutions. In the first place, we have ever been, and doubtless always shall be, a conglomerate nation. We began our existence as a people of most diverse national and social ideas, emigrants or direct descendants from England, Holland, France, and Spain. Although the English element of the population early gained the upper hand and has virtually controlled the national policy and destiny of the country until the present day, the diversity of national sentiment (due to the continuous influx from various European nations) has been gradually growing since early in the present century. As a result of this, it would be extremely difficult today to segregate in many regions the really American national element from the overwhelming multitude of the foreign conglomerate. These immigrants from the conti-

nent of Europe are, even after years of residence in America, still in many respects un-American in their modes of thought as well as in their ideas of government.

Then how can we hope for a national literature to arise from such unfavorable, such anomalous conditions? When we once become a unified nation in thought and sentiment then we may expect a more national literature than we have thus far produced

Moreover, diversity of national feeling, and therefore of national literature, has other bountiful sources in our midst. This country was launched on its national career with marked sectionalism in matters of religion, politics, and society in general. Virginia and Massachusetts differed far more from each other at the close of the seventeenth century than either differed from England. The industries of the two colonies were quite different, as well as most of their vital interests. There has been but one brief period when the hatchet of sectionalism was completely buried, that from about 1770 until 1820. And even in the Revolution petty sectional jealousies about commanding officers and the like more than once jeopardized the cause of American freedom. Are we sectional in our most immediate interests today? Who will claim that there is a complete community of interests between California and New England? between Louisiana and Minnesota? Where there is so little community of interests, it is futile to expect a common typical literature. A novel descriptive of the social life of San Francisco would be about as foreign to New York or Boston, as to Montreal or London.

So it does not seem to me difficult to understand why the literature of America has been for the most part sectional. The nearest we have come to the production of a

typical, national novel, for instance, is in those charming descriptions of Indian border life which Cooper has left in his "Leather-stocking Tales." And Cooper was a product of our strongest national period; some of his best novels were written not long after the close of the "War of 1812." There is no distinctively national note in any one of Hawthorne's great productions, unless we claim that New England life is typically national. Although Hawthorne's better novels are, as works of literary art, far superior to the best of Cooper's, no foreigner would, by reading one or all of them, have the remotest idea of the society of any part of America during the early years of the present century, except that of New England. The same may be said of all the later so-called "American" novels. Cable, Craddock, Howells and James have given us nothing but sectional novels, so far as their works may be localized anywhere by spirit and coloring. I also fail to see where Dr. S. Weir Mitchell has succeeded in making any great advance over his predecessors in "Hugh Wynne." Remove the characters of Washington, Franklin, Hamilton and a few other American officers, along with two or three battle scenes, from the stage of action, and there is left the real story: A simple description of the Quaker life of Philadelphia. The historical interest is by no means inherent in the novel, it comes from within every American reader who knows and reveres the great historical names which are incidentally associated with the story. The attempts at historical delineation would leave the average foreigner indifferent and listless.

In conclusion I wish to repeat that we cannot with propriety speak of an "American Literature" or an "American Novel," as we speak of an "English Literature," or an "English Novel." American literature is simply one im-

portant department of our great and noble English literature; nothing more. In a similar, but less important, way the growing literatures of Canada, India and Australasia belong under the one general head, English literature. It is, therefore, very confusing to speak of "American, Canadian, and Australian" literatures as existing independently of each other in the sense in which English, German, and French literatures do exist.

Among recent writers on American literature Pancoast seems to have most clearly comprehended the relation between the literatures of England and America, as well as the mission of the various divisions of English literature in the future: "But while we may fail to find among the great historic literatures of Europe any one which has come into existence under conditions exactly similar to our own, there exists outside of Europe a group of rising literatures among which ours properly finds a place. The United States is by no means the only country in which the civilization and literature of England are being carried forward under new conditions. For centuries, and especially during the last one hundred and fifty years, the English people have been building outside of the narrow limits of their island a great Empire that is now ninety-one times as large as the motherland. The English flag waves over tropic India and among Canadian forests; in Australia, in the distant Southern ocean, the English have raised up a rich, progressive, and powerful state; in half-mapped Africa is the wonderful spectacle of this widening English rule. It is not English rule merely, it is England herself, her Christian civilization, her institutions, her land, her language, and her literature that are thus reaching out to the ends of the world. Such facts mark an epoch, not only in the history of the English peo-

ple, but in the history of English literature. This expansion of England means also the expansion of English literature; it means that the English genius, which has been revealing itself through literature for more than twelve hundred years, has won for its use fresh materials for literary art by coming into contact with new and infinitely varied life. Our true place in literary history is as one of the literatures of this greater England. We have been brought into being by the same great historic movement; we inherit the same civilization, the same traditions, the same classics, the same national traits; we are sprung from the same race, and the speech of Shakespeare—England's poet and ours—is on our lips. The world stands but at the beginning of this greater English literature. The creation of it is a world-wide movement, in which we seem destined to bear no insignificant a part."

WM. H. HULME.

RESOLUTIONS ON THE DEATH OF TRUMAN P. HANDY.

At a meeting of the Faculty of Adelbert College on March 26, the following resolutions were unanimously adopted:

WHEREAS, Almighty God has taken to Himself the soul of the venerable and beloved Truman P. Handy, Trustee of Adelbert College and Western Reserve University, be it

RESOLVED, That we the Faculty and members of Adelbert College of Western Reserve University express our deep sorrow in the sad event that has deprived us of a generous friend and benefactor. Be it also

RESOLVED, That we recognize the beauty and power of his character and of his life of good works which have been so conspicuous examples among us. Be it also

RESOLVED, That a copy of these resolutions be sent with an expression of our sympathy, to his daughter, Mrs. John S. Newberry, and that these resolutions be spread upon the records of the Faculty of Adelbert College and published in our College and University periodicals, with a suitable memorial.

MATTOON M. CURTIS,
EDWARD W. MORLEY, Committee.

MEMORIAL.

It seems fitting that a memorial word should accompany the above resolutions regarding a life so singularly complete and fruitful. It is said of Christ that "He went about doing good,"—this is the ministry of benevolence. It is also implied that he did good by going about,—this is the ministry of character. In both these respects our departed friend was great,—a true disciple of his Lord. His life was a life of good deeds. He was bread to the hungry, he was clothing to the naked, he was comfort to the sorrowing and courage to the despairing. He was the good citizen, who touched life fruitfully at every point. A man of broad sympathies and interests, he always stood for the highest ideals in business, in education and in religion, and by his services in each of these departments his name will live so long as the institutions of this city endure. What is perhaps more valuable and impressive was his ministry of character. There was nothing theatrical in his life; his doing was grounded on being. He did good just by going about. Men felt and valued his presence. There was something in his quiet, unassuming manner that elicited confidence and imparted strength. He was a living reproach to pessimistic reflections upon human nature and to all suggestions as to the incompatibility of business successes with scrupulous integrity. We loved him for his works and for his character. We are thankful for his life. Because of it the world is better; because of it we have one more example of the possibilities of our common nature; because of it the impulses of righteousness are augmented; because of it he, being dead, yet speaketh of better things. M. M. C.

The following expression of sorrow was sent by the presidents of the classes of Adelbert College in behalf of the student body.

As presidents of the four classes of Adelbert College we beg in behalf of the student body to assure the family and friends of Mr. Truman P. Handy that we join with them in the sorrow that has just come into their midst. Though but a small proportion of the students had the privilege of a personal acquaintance, all who knew of Mr. Handy entertained for him a degree of admiration and esteem that amounted to love, and this was made evident by the pride taken in pointing out to our friends this friend of young men. As a type of the true manhood of integrity, uprightness, generosity and Christianity, he was a worthy model for young men. A life so filled with blessings for others assures blessing and happiness for itself both in this and in the other world, and as such it is an inspiration to us.

We are proud to remember that as a Trustee, Mr. Handy's name has been in almost constant association with this College since 1866, and that to him also we owe the Professorship of Philosophy as well as the annual Senior prizes in that group.

We believe therefore that young men,—and especially college men,— have lost a true, constant and helpful friend, and for this reason we cannot but be saddened by his death.

HARRY A. HARING, '98.
EARL H. JANES, '99.
FRANCIS S. HUTCHINS, '00.
RALPH S. TYLER, '01.

UNIVERSITY INTELLIGENCE.

LIBRARY REPORT.

Seven hundred and ninety-nine bound volumes have been added to the Library since October 1st, 1897. Three notable gifts have been received: Dodsley's Annual Register, vols.1-107, 1758-1865, and Index, 1758-1819, from Mrs. Charles F. Thwing, and Proceedings of the American Association for the Advancement of Science, 25 vols, 1849-1888, from Mrs. Edward Rowland Sill. Dr. H. C. Haydn has recently given about sixty-five bound volumes of periodicals, including the Independent, Bibliotheca Sacra, and The Christian Union. Among books of reference may be mentioned, the third supplement of Poole's Index; Quérard, Les Superchéries Littéraires Dévoilées; Barbier, Dictionnaire des Ouvrages anonymes; Bibliographie der Deutschen Zeitschr, Litt. Bd. I; Friedländer, Zoologisches Adressbuch; Monroe, Bibliography of Education. In the department of Sociology some weak points have been strengthened by additions along the lines of Criminology and Penology, and Railways; Ellis, The Criminal; Tallack, Penological and Preventive Principles; Rylands, Crime; Winter, N. Y. State Reformatory; Wines, Punishment and Reformation; Adams, Chapters of Erie; Davis, The Union Pacific Railway; Hadley, Railway Transportation; Hudson, The Railway and the Republic. Maine, Early History of Institutions, is an interesting addition to this department.

Traill's Social England is completed. Among other

additions to the History Department are: Colonial Laws of New York; Cardinal de Retz, Memoires; Harrisse, Diplomatic History of the United States, (presented by Col. Hay); Ritter, Deutsche Geschichte, vols. 1-2; Charvèriat, Histoire de la Guerre de Trente Ans, vols. 1-2. The set of International Journal of Ethics has been made complete. Several volumes on the history of Philosophy and a few on related subjects count more in quality than in quantity; Stephen, English Thoughts in the Eighteenth Century; Podmore, Studies in Psychical Research; Barth, Die Philosophie der Geschichte als Sociologie, Theil I.

In literature, French and English have thus far been favored almost exclusively. Texts and works of criticism have fared almost equally well in English, though in French the former seem to have had the preference.

Scott and Saintsbury's edition of Dryden's Works has been completed. A few other books are: Rossetti, Memoir of Shelley; Wright, Anglo Saxon and Old English Vocabularies I and II; Wülker, Codex Vercellensis; Chaignet, La Rhétorique et son Histoire; Brugmann, Comp. Grammar of Indo-Germ. Languages, completed by vol. 4, pt. 3, and indices.

In French: Chartier, Chronique de Charles VII, ed by De Viriville; De Belloy, Oeuvres, complètes, 6 vols; De Maupertius, Oeuvres; De Vitry, Oeuvres; Thibault IV, Chanson; Richelet, Dictionnaire de la Langue Françoise: Lenient, La Satire en France; Lubarsch Französische Verslehre; Foth, Die Französische Metrik; Meray, La Vie au Temps des Trouvères; Von Napolski, Leben u. Werke des Trobadors Ponz de Capduvill.

NOTES.

The Lakeside Hospital was opened January 10th with formal exercises followed by a reception. The opening prayer and the benediction were delivered by Bishop Leonard. The following addresses were made: "A Historical Sketch of the Hospital," by Mr. Lee McBride, President of the Board of Trustees; "An Ideal Hospital Staff," by Dr. H. H. Powell; "Training Schools for Nurses," by Mrs. Hunter Robb; "The Relation of Hospital to University," by President Charles F. Thwing; "Value to the Community of a Well-equipped Hospital," by Mr. W. R. Warner, President of the Cleveland Chamber of Commerce; "Hospital Administration," by Dr. C. Irving Fisher, Superintendent of the New York Presbyterian Hospital. The Lakeside Hospital is one of the best-equipped hospitals in the country. It is closely connected with the Medical College of Western Reserve University, not only in so far as its staff consists of members of the Faculty of the College, but also as offering to graduates of the College the advantage of hospital practice. This connection is very advantageous to the Medical College and the Hospital alike, and through them to the community at large.

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Eldred Hall, the building of the Young Men's Christian Association of Adelbert College, was formally opened February 25th by a reception offered by the Young Men's Christian Association of Adelbert College and the Young

Women's Christian Association of the College for Women, to the delegates of the Students' Volunteer Association attending the Convention at that time held in Cleveland. In addition to the generous gift of fifteen thousand dollars by Mr. Eldred for the erection of the building, Mrs. Eldred has recently given four hundred and fifty dollars for its furnishing.

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Through the continued generosity of Mr. H. R. Hatch the wings provided for in the original plans of the Hatch Library building are to be added in the coming season.

* * *

Since the first of July Adelbert College has received one hundred thousand dollars in cash from the estate of Daniel B. Fayerweather. Further payments will be made, but the amount is unknown. From this estate the College has now received one hundred and fifty thousand dollars, the specific legacy being fifty thousand dollars.

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Dr. Robert MacDougall has resigned his position as Associate Professor of Pedagogy to become Assistant in the Psychological Laboratory at Harvard University.

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Dr. Alma Blount, having decided not to remain as Instructor in English, intends to sail in July for Germany, where she will spend a year in study in Berlin and Munich.

Professor Palmié has been granted a year's leave of absence, which she intends to spend in study, chiefly at Göttingen.

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Mr. Talcott Williams of the Philadelphia Press is to give the address at the Commencement of the College for Women.

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The address at the Commencement of Adelbert College, the Graduate School, and the Law School is to be given by Professor George H. Palmer, of Harvard University.

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Mr. Eugene D. Holmes has been invited by the University of Minnesota to give two courses of instruction in English Literature during the coming summer term.

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Associate Professor Weston is writing a book on "Justice in Taxation." The number of law students attending Professor Weston's courses is increasing.

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Mr. W. J. Truesdale is engaged in special investigaton of the period of the French Revolution.

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In the Dental Department students have already begun to register for the session of 1898-99.

Professor Charles P. Fagnani, of Union Theological Seminary, New York, delivered a series of five lectures on "The Phenomena of the Bible as Conditioning its Interpretation" at Clark Hall, March 8, 10, 11, 15 and 17.

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Professor Deering has been granted leave of absence until next autumn on account of illness. Dr. George F. Saal is in charge of his classes for the remainder of the current college year. Professor Fowler has undertaken the duties of Dean of the Graduate School.

LIST OF PUBLICATION.

The following is a list of publications between October 1, 1897, and March 1, 1898, by members of the faculties of Adelbert College and the University, so far as returns have been secured. A few publications of earlier date are included. The names are arranged alphabetically:

HENRY L. AMBLER, M. S., D. D. S., M. D.—*Professor of Operative Dentistry and Hygiene.*

"Old and New Methods—Ex-Section Superior Maxillary Nerve."—*Ohio Dental Journal*, January, 1898.

"Care and Preservation of the Teeth."—*Woman's Sunshine*, Christmas Number, 1897.

LOUIS PRENTISS BETHEL, M. D., D. D. S.—*Associate Professor of Bacteriology.*

"Unseen Friends and Foes."—*Self-Culture*, March, 1898.

"Individual Records."—*Ohio Dental Journal*, February, 1898.

HENRY ELDRIDGE BOURNE, B. D.—*Professor of History.*

"Peter the Great." A Review.—*The Citizen*, January, 1898.

"America and Sea Power." A Review.—*The Citizen*, March, 1898.

WILLIAM E. BRUNER, A. M., M. D.—*Clinical Assistant in Ophthalmology.*

"Right-sided Lateral Conjugate Palsy."—*Annals of Ophthalmology*, October, 1897.

"Panophthalmitis with Cases."—*Cleveland Journal of Medicine*, November 1897.

WILLIAM THOMAS CORLETT, M. D., L. R. C. P., LONDON. —*Professor of Dermatology, Syphilology and Genito-Urinary Diseases.*

"A Case of Spontaneous Gangrene of the Skin."—*Journal of Cutaneous and Genito-Urinary Diseases.* N. Y., December, 1897.

MATTOON M. CURTIS, Ph. D.—*Handy Professor of Philosophy.*

"Philosophie in Nord-Amerika." In *Ueberweg-Heinze, Grundriss der Geschichte der Philosophie der Neuzeit*, Zweiter Band, Achte Auflage, S. 451-458. Berlin, 1897.

"Sympathy with the Lower Animals," Article III.—*Bibliotheca Sacra*, January, 1897, p. 38-50.

"Bibliography of John Locke and His Philosophy."—*Western Reserve University Bulletin*, October, 1896.

HENRY PLATT CUSHING, M. S.—*Professor of Geology.*

"Syenite Porphyry Dikes in the Northern Adirondack Region."—*Bulletin of the Geological Society of America*, Vol. IX, pp. 239-256. A paper read before the Geological Society of America at the meeting in Montreal, December 28, 1897. Abstract in *Journal of Geology*, Vol. VI, No. 1, 1898, pp. 119-120.

ROBERT WALLER DEERING, Ph. D.—*Professor of Germanic Languages and Literature.*

"Graduate Study in America."—*Western Reserve University Bulletin*, October, 1897, pp. 56-59.

VERNON J. EMERY, A. M.—*Instructor in Latin.*

"On the Definition of Certain Rhetorical Terms."—*American Journal of Philology*, Vol. XVIII, No. 2.

ALEXANDER HADDEN, A. M.—*Professor of the Law of Crimes.*

"The Identification of Criminals by the Bertillon System."—*Western Reserve Law Journal*, December, 1897.

HIRAM COLLINS HAYDN, D. D., LL. D.—*Vice President of the University and Instructor in Biblical Literature.*

"What is the Matter with the Presbyterian Church?"—*The Independent.*

"Is There No Way Out?"—*The Independent.*

FRANCIS HOBART HERRICK, Ph. D., Sc. D.—*Professor of Biology.*

"A Variation Which is Regularly Acquired but Never Inherited."—*Science*, February 25, 1898.

EVAN HENRY HOPKINS, A. B., LL. B.—*Professor of the Law of Torts, Contracts, and Equity Jurisdiction.*

"The Study of Law."—*Western Reserve University Bulletin*, October, 1897, pp. 60-64.

WILLIAM T. HOWARD, Jr., A. B., M. D.—*Professor of Pathology, Pathological Anatomy and Bacteriology.*

"The Influence of Milk in the Spread of Diphtheria, with an Account of a Milk-Epidemic."—*American Journal of the Medical Sciences*, November, 1897.

"The Importance of the Bacillus Mucosus Capsulatus (B.

of Friedlaender) as a Cause of Acute and Chronic Infections."—*The Philadelphia Medical Journal*, Vol. I, No. 8, February 19, 1898.

ROBERT MACDOUGALL, M. A., Ph. D.—*Associate Professor of Pedagogy.*

"The Field of Psychology."—*Western Reserve University Bulletin*, October, 1897, pp. 47-55.

BENJAMIN L. MILLIKIN, A. M. M. D.—*Professor of Ophthalmology.*

"Diseases of the Eyelids." In "An American Textbook on Diseases of the Eye, Ear, Nose, and Throat," edited by Schweinitz and Randall, Philadelphia.

"Additional Notes on a Case of High Mixed Astigmatism." *American Journal of Ophthalmology.*

EDWIN VERNON MORGAN, A. M.—*Instructor in History.*

"Slavery in New York"—Half-Moon Series, Vol. II, No. 1, January, 1898. G. P. Putnam's Sons, New York.

WILLIAM H. NEVISON, A. B., M. D.—*Lecturer on Minor Surgery and Bandaging.*

"Infusion of Saline Solution."—*Cleveland Journal of Medicine*, December, 1897.

HUNTER ROBB, A. M., M. D.—*Professor of Gynecology.*

"The Bacteria Occurring in the Female Genital Canal and Their Relation to Endometritis." Abstracted from Archiv für Gynäkologie, No. 50, Pt. 3, 1896.—*Cleveland Medical Gazette*, August, 1897.

"The Menopause, a consideration of the phenomena which occur to women at the close of the Child-bearing

Period, with Incidental Allusions to their to Relationship Menstruation. Also a particular consideration of the Premature (especially the artificial) Menopause." By Andrew F. Currier, A. B., M. D. D. Appleton & Co., New York, 1897, pp. 309. Revised in *Cleveland Medical Gazette*, November, 1897.

"The Treatment of Retro-Displacements of the Uterus." Read before the Cleveland Medical Society, December 17, 1897, and also before the North-Eastern Ohio Medical Society, February 8, 1898. Published in the *Philadelphia Medical Journal*, February, 1898. Also in the *American Journal of Surgery and Gynecology*, February, 1898.

"Suture Methods and Suture Materials in Coeliotomy." Periscope for Cleveland Medical Gazette. Abstracted from Monatsschrift für Geburtshülfe und Gynäkologie, September, 1896.—*Cleveland Medical Gazette*, February, 1898.

"The Influence of Extirpation of the Ovaries upon Structural Changes in the Uterus." Abstracted from the Archiv für Gynäkologie, 1896-97.—*Cleveland Medical Gazette.*

CHARLES F. THWING, D. D., LL. D.—*President.*

"Certain Conditions in American Colleges"—*Western Reserve University Bulletin*, October, 1897, pp. 65-73.

"The American College and American Life." G. P. Putnam's Sons, New York, pp. 313. 8 vo.

"The New Profession."—*Educational Review*, January, 1898.

"Christian Work Among College Men."—*The Open Church*, New York, February, 1898.

"Personal Morals and College Government."—*North American Review*, March 1898.

FREDERICK MORRIS WARREN, Ph D.—*Professor of Romance Languages.*

"Notes on Mediaeval French Literature: The Date of the Roman de Thèbes—The Pastourelle and Carole."—*Modern Language Notes*, January, 1998.

"Racine." In Warner's *Library of the World's Best Literature.*

HENRY CLAY WHITE, A. M., LL. B.—*Professor of the Law of Wills and Administration of Estates.*

"The Early Bench and Bar of the Western Reserve." (A sketch.) In the *Bench and Bar of Ohio*, Vol. II, pp. 1-11. The Century Publishing and Engraving Co., Chicago, 1887.

"Felo de Se." An address delivered before the Medico-Legal Section of Cuyahoga County Medical Society. Published in *Law Journal Western Reserve University Law School*, March, 1898.

W. H. WHITSLAR, M. D., D. D. S.—*Professor of Anatomy and Pathology*, Dental Department.

"Root-Canal Treatment." Read at the Twenty-seventh Annual Meeting of the New Jersey State Dental Society, July, 1897. Published in *Items of Interest, Dental Journal*, December, 1897.

PUBLIC LECTURES AND PAPERS.

The following is a record of public lectures and of papers before learned societies, etc., delivered between October 1, 1897, and March 1, 1898, and not published before March 1, 1898.

(When the author's title or position has already been mentioned in the list of publications, it is not repeated in this list.)

HERBERT AUSTIN AIKINS, Ph. D.—*Professor of Philosophy.*

"The New Phrenology and Its Lessons." A lecture before the Mothers' Club of Miss Mittleberger's School, January, 7, 1898.

WILLIAM THOMAS CORLETT.

"Recent Researches in Ringworm." Address before the Buffalo Academy of Medicine, November 8, 1897; also Wayne County Medical Society of Detroit, December 2, 1897.

HENRY PLATT CUSHING.

"Local Physiography." A lecture before the Natural History Club of Cleveland, February 14, 1898.

ROBERT WALLER DEERING.

"The German Classics in High Schools." Paper read at the Columbus meeting of the Modern Language Association of Ohio, November, 1897.

FRANCIS HOBART HERRICK.

"The Protection of the Lobster Fishery." Paper presented at the U. S. Fishery Congress, held at Tampa, Florida, January 19, 1898.

"Modern Biology." An illustrated lecture delivered before the Women's Club of Northfield and Tilton, New Hampshire, December, 18, 1897.

"Cuyahoga River Water." A lecture at the Goodrich Social Settlement, February 3, 1898.

JOHN M. INGERSOLL, A. M., M. D.---*Lecturer on Otology, Rhinology and Laryngology.*

"Sinusitis Nasi." A paper read before the Cleveland Medical Society, February 25, 1898.

ROBERT MACDOUGALL.

"The Intellectual Content in Dream-consciousness."

"Post-hypnotic Suggestion from Dreams." Two papers read before the American Psychological Association at its meeting in Ithaca, New York, December 28-30, 1897.

"Mental Heredity and Social Suggestion in the Child," and other topics. Twelve lectures to teachers of Cleveland, September to December, 1897.

EDWIN VERNON MORGAN, A. M.---*Instructor in History.*

"Hawaii: Annexation or a Protectorate." A lecture at Miss Hersey's School, Boston, Massachusetts, December 13, 1897.

"Hawaii: Land, People and Political Problem," An illustrated lecture at Wells College, Aurora, New York, February 21, 1898.

HUNTER H. POWELL, A. M., M. D.---*Professor of Obstetrics and Pediatrics.*

"Egypt." An illustrated lecture at the Goodrich Social Settlement, December 19, 1897.

"The Ideal Medical Staff of a Modern Hospital." An address at the opening of the Lakeside Hospital, January 10, 1898.

FREDERICK MORRIS WARREN.

"The French Romantic School." Eight lectures beginning January 31, 1898, delivered at John Hopkins University.

BOOK NOTICES.

NOTE—All books sent to the Bulletin by publishers will be recorded under the head of Books Received (see p. 108). A limited space is available for somewhat more extended notice, which will be given to those books, which, in the editor's judgment, more especially demand it.

THE BUILDING OF THE BRITISH EMPIRE—THE STORY OF ENGLAND'S GROWTH FROM ELIZABETH TO VICTORIA. By Alfred Thomas Story. 2 Vols., 391 and 438 pp., 8 vo. G. P. Putnam's Sons. One of the Story of the Nations Series.

This is a story not so much of England proper, as of the acquisition and handling of her colonial possessions. The mother country is the subject of discussion only in so far as her development bears on the progress of the colonies. As the starting point is taken the exclusion of England from her continental possessions, and her being driven beyond seas for any possible accession of empire. The object is "rather to describe results than to trace causes." The conflict with Spain for the supremacy of the seas, the colonization of this country, the conquest of India and the settlement of Australia are naturally the topics discussed at greatest length. It is somewhat difficult, at least for an American reader, to view as different parts of the same whole, the independent growth toward nationality of the American colonies and the military and commercial

manœuvers of the East India Company. The third and the fourth of the above topics make up the more interesting portions of the book, and would best repay perusal. The other two cover ground likely to be already familiar.

* * *

THE HISTORY OF ORATORY FROM THE AGE OF PERICLES TO THE PRESENT TIME. By Lorenzo Sears, L. H. D., Professor in Brown University. 439 pp., 12mo. Chicago: Scott, Foresman & Co.

This is an interesting book, treating of the art of oratory as it has appeared under different aspects in the course of twenty-three centuries. The author is evidently more familiar with the oratory of recent than of remote times, but he has read widely and thoroughly in the oratorical literature of all periods. The chapters dealing with patristic and mediaeval oratory are especially valuable because their subject-matter is less generally familiar. In an American book written for American readers it is natural and perhaps even laudable that more space is devoted to American orators than their importance in the development of oratory demands. Numerous and sometimes extensive quotations from the orators under discussion add greatly to the interest and value of the book.

* * *

SELF-CULTIVATION IN ENGLISH. By George Herber-Palmer, LL. D., Alford Professor of Philosophy in Hart vard University. 12mo., 32 pp., 35 cents. T. Y. Crowell & Co., New York and Boston.

Professor Palmer intends his words to serve as a sort of introduction to the many books on rhetoric already exist-

ing. He says: "every hour our language is an engine for communicating with others, every instant for fashioning the thoughts of our own minds. I want to call attention to the means of mastering this curious and essential tool." He addresses himself to those who have little time and little access to the great apparatus of libraries. The style is firm and compact, clear and convincing, and the illustrations are admirable. It is a most inspiring little manual.

* * *

THE CID CAMPEADOR AND THE WANING OF THE STAR AND CRESCENT IN THE WEST. Heroes of the Nations Series, pp. XIV; 382, 8 vo. G. P. Putnam's Sons, New York.

This book comes at an opportune time. If it is true that the national heroes of a people embody the ideals of that people, a perusal of this account of the life and exploits of the great Spanish hero may serve to give us a better notion than we now possess of the virtues and faults of this nation with which political events are threatening to bring us into close contact. Mr. Clarke is, above all, to be commended for the brief but clear and accurate account of the condition of Spain from the Saracen conquest, in 711, to the time of the Cid, in the 11th century. These were three centuries of untiring and unequal contest against a heathen foe. A state of things that must of necessity have called for and developed the characteristics that we find in the Spanish people, viz: their bravery, their bold and independent spirit, their patriotism, their chivalrous sense of honor, and above all, their religious fervor and fanatical zeal—all of these characteristics that centuries of supersti-

tion, of corrupt government and misfortune have not been able wholly to eradicate.

Don Rodrigo Diaz de Bivar, commanly called Myo Cid—that is, my lord—or El Cid Campeador—the champion—in the chronicles and poems that treat of his deeds, was born, according to the best accounts, in Castile, in 1026, and died in Valencia in 1099. This long life was spent chiefly in fighting against the infidels, in performing mighty deeds of valor and prowess, and in reconquering for Spain from the Moors Valencia and the surrounding country.

As was natural legend at an early period took possession of the Cid, and the imagination of the Spaniards endowed him with all the qualities that they most admire.

However, notwithstanding much that is fictitious, both in the story and the character of this hero, there is no doubt that he was a most remarkable personage. We have for this the best of all testimonies, that of his greatest enemies, the Moors. "This scourge of his time," says the Arabian chronicler, Ibn Bessam "was by the boldness of his wit, the greatness of his prudence and resolution, and his incomparable courage a miracle of the miracles of God and he was, may God's curse light on him, the conqueror of banners."

Mr. Clarke narrates the events of the life of the Cid in a lively and sympathetic manner, and deserves especial praise for the care with which he differentiates the real Cid from the Cid of romance and poetry, and for the skill with which he shows us how—we quote his own words—"the rough and turbulent free-booter, the destroyer of churches, whose lance was equally at the service of Moor or Christian, has become in time the pattern of religious zeal, the mirror of chivalry, the type of patriotism, the champion of popular rights, and the model of unquestioning loyalty."

Mr. Clarke, who is not only a romance scholar of repute but well versed in Arabic, has gone back for his materials to the mediaeval chronicles and romances, both Christian and Arabic, and has constructed of these materials carefully sifted, a vivid story, truthful and accurate in details, and interesting as depicting, not only the great national Spanish hero, but also one of the most exciting epochs in the history of a proud and brave nation.

* * *

CHILDREN'S WAYS. By James Sully, M. A., LL. D. 193 pp., 12mo. New York, D. Appleton & Co., 1897.

This volume consists mainly of selections from the author's "Studies of Childhood," popularized, as he says, by "cutting out abstruse discussions, dropping as far as possible technical language, and adapting the style to the requirements of the general reader."

When Professor Sully's "Studies" were published they added little to what had already been said, here and there, in various educational books and journals about such things as the plays, impulses, ideals, faults, fears, drawings, conceptions and misconceptions of children; but they put much of what had been said before the general public in a connected and interesting way. The volume just published will carry the work of popularization a step further.

* * *

IN THE MIDST OF LIFE: TALES OF SOLDIERS AND CIVILIANS. By Ambrose Bierce. G. P. Putnam's Sons, New York and London. pp. 362, 12mo.

These tales, twenty-three in number, relate not to men famous in the annals of our history but to privates and non-

commissioned officers in the Army and to ordinary business men among the civilians. The descriptions are clear, the action good, and the interest of the reader is not allowed to flag. This fact is due partly to the nature of the stories, for every one of them is tragic, and the death is usually caused by convulsions of fear, leaving the victim's body to be found with eyes staring and fixed in death. Ghosts figure prominently, and the whole series reminds one of the unreal, imaginative writings of Charles Brockden Brown, whose plots are no less impossible.

* * *

A SIMPLE GRAMMAR OF ENLGISH NOW IN USE. By John Earle, pp. XII+297. New York. G. P. Putnam's Sons, 1898.

This Simple Grammar of English somewhat belies its title in that it includes too much. Not only is the subject of grammar treated in the book, but nearly one hundred pages are devoted to the subject matter of rhetoric. These hundred pages are given up to a discussion of such subjects as poetic diction, figurative language, poetry, reading aloud, public speaking and prose composition. All these subjects are, of course, connected more or less closely with grammar, but are scarcely to be expected in a book with such a title. The part of the book which deals with grammar proper is notable, not so much for new material as for new ways of putting well-known facts. Some of these are to be commended, while others, as the use of a new and unnecessary nomenclature, are not likely to be of much service.

AMERICAN IDEALS AND OTHER ESSAYS, SOCIAL AND POLITICAL. By Theodore Roosevelt. 354 pp., 320. G. P. Putnam's Sons, New York, 1897.

Mr. Roosevelt puts into his writings the ebullient vigor of his personality. He has little respect for cloistered virtue. He would have the "good citizen" stop filling himself with the pleasures of a fine scorn flung at the politicians and their deeds, and would have him become himself a fighting politician, ready to hit hard blows for better things. In what he says about foreign relations Mr. Roosevelt, as was to be expected, speaks for the trumpet and drum school of patriotism, and looks, with ill disguised contempt, upon the men of peace as flabby creatures.

* * *

THE AYRSHIRE HOMES AND HAUNTS OF BURNS. By Henry C. Shelly, with photographs by the author. 150 pp., 16mo. G. P. Putnam's Sons, New York and London.

This little volume contains selections from the poems of Burns, in which the scenes of his life in Ayrshire have been made memorable. They are prefaced by a slight essay, and illustrated by numerous good half-tones from photographs. The author justly complains of the execrable taste displayed by the management of the Burns Alloway Birthplace, with its turnstyle entrance, its mediocre sculpture, and the worthless trinkets on sale, not to speak of the temperance restaurant attachment, which tend to stifle anyone who has a glimmer of genuine literary interest. The book, though it belongs to the sugar-plum order, is in good taste, and is much more desirable than a chromo or a birthday calendar.

BOOKS RECEIVED.

"The Growth of the Kingdom of God." Sidney L. Gulick, M. A. Fleming H. Revell Company. New York. pp. 320, 8vo.

"Self Cultivation in English." Professor G. H. Palmer. T. Y. Crowell & Company. Boston. pp. 32, 8vo.

"Strategic Points in the World's Conquest: The Universities and Colleges as Related to the Progress of Christianity." John R. Mott. Fleming H. Revell Company. New York. pp. 218, 8vo.

"Ships and Havens." Henry Van Dyke. Thomas Y. Crowell & Company. Boston. pp. 37, 8vo.

"Why Go to College?" Alice Freeman Palmer, ex-President of Wellesley College. Thomas Y. Crowell & Company. Boston. pp. 32, 8vo.

"The Building of the British Empire: The Story of England's Growth From Elizabeth to Victoria." The Story of the Nations Series. Alfred Thomas Story. G. P. Putnam's Sons. New York. In two parts. 391 and 438 pp., 8vo.

"In the Midst of Life: Tales of Soldiers and Civilians." Ambrose Bierce. G. P. Putnam's Sons. New York. pp. 362, 16mo.

"The Cid Campeador." H. Butler Clarke, A. M. G. P. Putnam's Sons. pp. 382, 8vo.

"The History of Oratory." Lorenzo Sears, Professor in Brown University. Scott, Foresman & Company. Chicago. pp. 440, 8vo.

"A Simple Grammar of English Now in Use." John Earle, M. A. G. P. Putnam's Sons. New York. pp. 297, 8vo.

"Children's Ways." James Sully, LL. D. D. Appleton & Company. New York. pp. 193, 8vo.

"American Ideals, and Other Essays, Social and Political." Theodore Roosevelt. G. P. Putnam's Sons. New York. pp. 354, 8vo.

"The Ayrshire Homes and Haunts of Burns." Henry G. Shelley. G. P. Putnam's Sons. New York. pp. 150, 16mo. Copiously illustrated.

"The American College and American Life." Charles F. Thwing, President of Western Reserve University. G. P. Putnam's Sons. New York. pp. 313, 8vo.

"Seven Years in Sierra Leone: the Story of the Work of William A. B. Johnson." A. T. Pierson, D. D. Fleming H. Revell Company. New York. pp. 252, 8vo.

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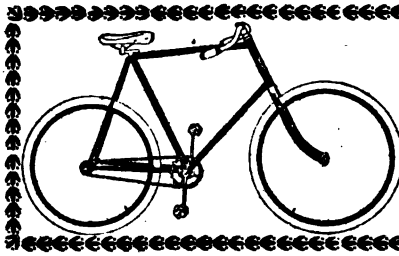

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THE WESTERN RESERVE UNIVERSITY BULLETIN is designed to serve as a medium of communication between the University and its alumni, friends and the general body of scholars engaged in teaching or research. It contains a report of the most important acts of the Board of Trustees and of the Faculty, a record of the publications and public lectures of the Faculty and of the most important accessions to the library; accounts of special research work in prosecution; original contributions from the Faculty or advanced students dealing with subjects of scientific or educational interest; brief summaries of contributions by members of the Faculty to other periodicals, notices of books written by the Faculty, and such other matter as is deemed suitable for the ends in view, which are the diffusion of information in regard to the work of the University, the preservation of a permanent record of its activities and the promotion of science in the broadest sense, by the publication of original contributions to knowledge.

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THE NATION'S DUTY IN THE PRESENT CRISIS.*

There are years when commencement seems an artificial crisis of the academic calendar—when it is impossible to read into the knit and ordered march of calm event without, the sense of momentous change and impending opportunity within college walls. The date for which we have waited through four sweet years that rose and fell comes. Its figures will always have for us somewhat of the personal and intimate flavor which attaches to our initials, but these are themselves but a Cadmean heritage shared by all the world alike. And our year, which means so much to us, will be slipped on the thread of fame and fate by a world, regardless of its supreme importance to a thousand college classes.

In vain, the platform and benches seek to give the occasion vitality and all its emotions actuality by rehearsing familiar themes and marshalling thoughts that doubtless wake to perish never; but which academic experience tells us breed somnolence on the audience. On an occasion like this also, I fear that the woman graduate is prone to feel that the masculine speaker is inclined to give individuality to the occasion by dwelling on duties and virtues whose importance every one admits, but whose intertwining

*An address delivered at the Commencement of the College for Women of Western Reserve University, Cleveland, Ohio, June 21, 1898.

responsibilities, every candid man knows, are shared by both sexes alike. Neither the general nor the special in the thought and education at most commencements save us this sense of unreality. We speak of beginnings, of fresh responsibilities, of all things new, and we know but too well that in the world and the nation, the old order does not change giving place to new. But not in this battle June! Thrice fortunate are you in your birth into the great guild of learning and of letters, whose every privilege is responsibility, in an historic year. Your successors who see your class numbers in the future, will feel in some sort the historic emotion which awakes in us in larger share, when we chance upon the number of a class in the last century and remember that Ames and Otis were together at Harvard—that Livingston and Witherspoon were seated at Princeton on the same benches from which Burr and Madison had but just risen—that at Columbia, Alexander Hamilton was a sophomore, and that at Yale, pursuing the same studies were Moses Cleveland, the founder of this city, and Nathan Hale, whom his college gladly gave to take his degree at the halter in a Commencement of human liberty.

Those who come after you, as they read your names in the University catalogue under your class number, will not first ask themselves of your academic achievements, but will wonder with what emotion and opinion you responded to a commencement season when the Republic first broke her continental bounds and set her victorious feet on shores beyond the sea. Born its citizens, your education

has lifted you to the solitary aristocracy of its citizens whose supreme privilege and duty is to hold no opinions upon the Republic, but those which are based on justice and justified by the history of our country.

I have never been able to see why the sex which is most faithful to domestic duties should be most lectured about them. An academic theme I cannot select in this season and you would not listen if I did when the very air bids us—

"Either go chatter to the singing birds,
"Or teach the lessons of the hour."

Its lesson is not plain; the lesson of a new crisis and commencement in affairs never is. Into the emotions of the names I have cited, we perpetually read the assurance of after knowledge. We forget that at every real crisis, good men have always differed and wise men have predicted disaster. It was as little possible then as now to decide whether expanding opportunity or irremediable error lay before, to tell whether, "Truth's yet mightier man child leaped below the future's heart," or whether some progeny was about to be brought forth, born of a fatal wedlock between national ambition and partisan intrigue.

I have no desire to touch those springs of emotion and applause which bubble and babble but too near the surface at a time like this. With fervent patriotism, with earnest over mastering desire to see war brought to just and victorious peace, I ask you to lay this academic hour on the altar of national devotion and soberly consider the New National Duty that looms large before us, whether the curve of our

national history justifies the orbit upon which the Republic is launched, and which leaves all the world gazing

"Like some watcher of the skies,
"When a new planet swims into his ken."

And whether in this orbit, our country is following those laws of international responsibility which guide the just movements of nations and which, like the laws of nature, discover themselves not by enactment, but by studious observation.

As we turn to this adjustment between the historic course of our country and the opinion and law of civilized mankind, the paradox appears that while of all countries the United States is least desirous of territorial acquisition, save as it be necessary to defend our coasts and protect our commerce under new conditions of naval warfare, the opinion of Europe, England always excepted, unites in looking upon us as engaged in wanton aggression for territorial aggrandisement.

There was a time in our history when the acquisition of Cuba was looked upon as the natural, inevitable and ultimate result of our continental expansion. Ninety years ago, Jefferson said of the spot where our guns sound to-day, "I would erect upon the southernmost limit of Cuba a pillar, and inscribe on it 'Ne Plus Ultra' for us in that direction." Between this utterance in 1809 and the first word of our diplomacy on Cuba in 1823, we twice faced Spain's misrule in Florida, which Spain still ruled, claimed and occupied, but in which it was unable to maintain order. We twice entered this territory by

armed force and we twice left it for Spain to decide whether this act should be one of peace or war.

Discrepancies in the treaties of 1763, 1800 and 1803 had left the western frontier of Florida dubious, but with reference to territory still claimed by Spain and in which she had ceased to restrain disorder. In 1811, Congress passed a secret statute which was not published in our laws until 1817. Under it, in time of profound peace, our troops entered this region, summoned Spanish commanders to surrender and annexed the territory prior to its acquisition by treaty. In 1817, Amelia Island, off our coast, but Spanish territory, had become the resort of a pseudo military force flying the flag of the Southern Republic, whose operations were little removed from piracy. "Since," wrote Secretary Adams, November 11, 1817, "Spain is notoriously unable either to retain possession of it against them or to recover it from them," the United States was bound to occupy the island and did so by executive order two years before Florida was ceded by treaty.

I do not lay stress upon these precedents which to-day are to us little more than inevitable steps in rounding out our continental boundary; but it is well to remember that both Madison and Monroe, men solicitious of international rights, when confronted by disorganized Spanish territory, occupied it and left the issue of peace or war to Spain. And I do not doubt that eighty years hence, when we shall be not seventy millions but one hundred and fifty millions, and the English speaking race shall be not one hundred and ten millions but two hundred and fifty, and

with our sister nation we shall have entered upon our appointed task of preserving the peace of the sea the world around and keeping fretful realms in awe of law and arbitration that in some

"Hour to which fate has joined
"Great issues good or bad for human kind,"

acts which are to-day as hotly contested as were the occupation of West Florida and Amelia Island, will be cited as just and inevitable steps in the great work of the two nations now harmoniously united, and let us trust never again to see disagreement.

Taught by the peaceful and inevitable steps through which Florida had been incorporated in our territory, John Quincy Adams, April 28, 1823, when our diplomacy was first forced to express itself upon Cuba, pointed out that "there was a political as well as a physical gravitation," and in a familiar passage he laid down the principle that the relations of Cuba to the United States must be guided by the condition and needs of the island and not by our aggression. The hour was serious. Spain had been brought under the control of despotic and reactionary Europe. England, which under Canning, had called a new world into existence to repress and balance all the old, seemed likely to seize Cuba in return. Pending the hour when Cuba should need us, we began our guarantee of the Spanish title of Cuba against all comers with the words in Secretary Adams' dispatch just quoted to Nelson, "The transfer of Cuba to Great Britain would be an event unpropitious to this Union." Six weeks later, speaking more plainly in a private letter, June 11, 1823, Jefferson wrote to Mon-

roe, "The acquisition of Cuba by Great Britain would be indeed a great calamity to us," and he suggested it as the only probable cause of war with England. This pledge broadened with need. We began by excluding England. "You will now add," wrote Secretary Henry Clay, when Adams was himself President, to our Minister, Brown, October 25, 1825, "that the United States could not permit the occupation of these islands by any other European power than Spain under any contingency whatever."

Five years passed—Mexico and Columbia as an unquestionable and permissible act of war, were proposing the invasion of Cuba. Martin Van Buren, as Jackson's Secretary of State, October 13, 1830, warmly "remonstrated," and required through our Minister, Van Ness, a pledge that Mexico would desist. The prohibition against European powers had been widened to extend to every American power and a pledge required besides.

Few American colonies, not even ourselves, have been able to sunder their relation with the parent country without external aid. Peninsular veterans turned the scale in Venezuela. Admiral Cochran and his English sailors secured the independence of the west coast of South America. There seemed to be a prospect that like aid would be extended to a Cuban struggle. With this in mind, Daniel Webster wrote to our Minister in Madrid, January 14, 1843, "In the event of any attempt to wrest Cuba from her, Spain may securely rely on the whole military and naval resources of the United States to preserve or recover it." Nine years later, December 1, 1852,

when Webster's successor in another term, Edward Everett in a dispatch to the British Minister, Mr. Crampton, summed up our attitude in regard to Cuba, he refused to make this guarantee a matter of international agreement. Twenty-six years before, April 13, 1826, Henry Clay had written to Mr. A. H. Everett, "The United States can enter into no stipulations to guarantee Cuba and Porto Rico to Spain." Edward Everett, in a luminous dispatch, now laid down the triple principles of our relations to Cuba. First, that we would allow no other power to take it. Second, that we would make this guarantee alone, and third, that we would not agree with any other power not to take it ourselves, because the needs of Cuba might at some time require our interference; but the President "would consider its acquisition by force, except in a just war with Spain should an event so greatly to be deprecated ever take place, as a disgrace to the civilization of the age."

Once only for a brief period, was there risk that this honorable pledge, which had broadened and widened through thirty years, should be broken by the seizure of Cuba without reference to its condition and needs. This doctrine was advanced in the Ostend manifesto, but with the supremacy in 1860 of the political party which had resolved in 1856 "that the highwayman's plea that might makes right embodied in the Ostend circular, was in every respect unworthy of American diplomacy, and would bring shame and dishonor upon any government that gave it their sanction," this peril passed away.

Our national policy was now clear. We did not

need Cuba till Cuba needed us, and we jealously retained in our hands the right and duty of judging when this need arose. Forty years ago, when this policy was definitely accepted, no colony seemed less likely to need interference. Prosperous, profitable and loyal, its future was based upon the sugar markets of the world, and now there came one of those changes in the economic balance of production which shift the scales of empire and bring decaying powers to destruction.

In 1840, less than a twentieth of the world's sugar was made from beet root, and Cuba supplied a fifth of the world's cane sugar. In ten years, 1840-50, beet root sugar quadrupled to a product of two hundred thousand tons annually, and Lopez's rebellion was the fruit. Twenty years passed. In 1870, cane sugar had increased in product but one-half, rising to one million, eight hundred and fifty thousand tons, and beet sugar had grown seventeen fold to eight hundred and fifty thousand tons per year under the discoveries of German chemists and the bounties of the second empire in France, and the second Cuban rebellion broke out. When the last came, three years ago, the beet root sugar product had increased by leaps and bounds till it supplied two-thirds of the world's sugar, and of the third of cane, Cuba supplied barely a third or a little over one-ninth of the total product. The whole fabric of affairs in Cuba, its plantations, its commerce, its taxation, the cost of its government and its garrison had all been adjusted to its preponderant share in the one supply of sugar for the world. That lost, the whole fabric sank to ruin

and a great debt, one-third the size of our national debt, was run up in the vain endeavor to stay the bowing wall.

Those who declare that insurrection has been fomented by American influence in Cuba, forget that the collapse of Spanish rule is due to economic and not to military disaster. I know nothing more pathetic in history than this slow bankruptcy of a nation and its colony by causes which neither could control. The best elements of Spanish character, pride, sense of personal dignity, high honor, conservatism, perseverance and loyalty, akin to that of religious faith, for Spain maintains a medieval devotion and is perhaps the one Latin land in which men are still devout, but united to emphasize disaster, while all the worst qualities, oppression, cruelty and maladministration accelerated it.

Once did she hold the gorgeous east in fee
And was the safe guard of the west;
Men are we and most grieved when even the shade
Of that which once was great doth pass away.

As Spanish administration deteriorated under economic depression, our obligation increased. We had guaranteed the Spanish title to the island against Europe, against every American country and against all external aid and Spain had accepted the guaranty. We had protected it from the chances of war and the changes of peace. We were morally bound to see that Cuba fared at least no worse than had we permitted it to follow the course of every other Spanish colony. Of our moral responsibility to the character of Spanish administration there could be no doubt.

For forty-five years we had protected, guaranteed to title for thirty through two insurrections, we had yearly recognized, the obligation which our pledges had created. But when we came to political action, until an independent sovereignty were established in Cuba, we were met by the claims of Spanish sovereignty.

The equal independent and indefeasible character of sovereignty is the fundamental principle of organized society. By it stand the security and honor of states, the safety of society, the protection of property and the guidance and guardianship of the contact and the contracts of men. Unless there be some law of action known and recognized by nations which transcends the claims of mere sovereignty,

"Untwine that string,
"Hark what discord comes,
"Everything includes itself in power,
"Power into will, will into appetite,
"And appetite an universal wolf."

Text books know no exceptions of sovereignty, but you have learned that it is not in the text book but in the laboratory that the truth of science is recorded. Sovereignty, like all things earthly, has had its changes and mutations, its differentiation and development.

The medieval theory knew but one supreme sovereignty, the emperor in temporal and the Pope in spiritual jurisdiction. For a century and a half after the middle ages closed, religion rivalled the claims of sovereignty and allegiance was dissolved at the demands of faith. For a century and a half more, to

the French Revolution, dynastic considerations were intermingled with sovereignty and its claims were akin to those of property. When the Congress of Vienna met after the welter of the French Revolution, it doubtless might have preferred to follow dynastic claims, but coercing circumstance forced it to disregard alike sovereignty created by conquest and by descent, and to redistribute the map of Europe ostensibly at least with reference to the general good. The acts of this Congress no friend of freedom can approve. Its principle opened the path in public law to an authority higher than mere sovereignty. In 1820 when the subjects of Ferdinand I. of Naples overturned one of its governments and forced a constitution upon him, Metternich justified interfering with 60,000 Austrian soldiers on the ground that since Europe had established a certain form of government, no one nation could alter it without peril elsewhere to the maintenance of law and the preservation of order. In 1823 a French army entered Spain abolishing a liberal constitution which our own government in vain sought to recognize at Cadiz, and re-established despotism. In 1827 the Greek revolution had reached a point at which neither Turkey nor Greece seemed likely to reach a successful termination. First England and Russia, and later England, France and Russia united in interference. Metternich, in a despatch to whose logical ability no one can take exception, pointed out that while it was possible to interfere in behalf of a government because governments admitted an exact definition, the instant sovereignty was overthrown, state craft

was embarked on a vague sea of philanthropic purpose without chart or compass. But the battle of Navarino was fought and Greece was free. In 1830 Belgium arose against Holland. The title of Holland was as good as any in Europe. The Belgium provinces had been solemnly assigned to the Netherlands by the Congress of Vienna, and there were fortresses which had been occupied by the Dutch since the treaty of Utrecht in 1713. But a conference of five powers at London, not only decided that it was for the good of Europe that Belgium should have independence rather than that Holland should suppress an insurrection with which she was fully able to cope, but refused to allow Holland as an interested party to share in determining the new boundary. In ten years, European interference had moved forward from aid to a government to an unarmed and as yet unsuccessful insurrection. Steadily the principle that the good of all was superior to the sovereignty of one widened. In 1858 France and England withdrew their ambassadors from Naples on the ground that the administration of the two Sicilies was such that no decent government could maintain diplomatic relations. Twenty years later the march of the victorious armies of Russia was stayed in sight of the crescent on the dome of St. Sophia and the Berlin Congress redistributed in the interest and in the name of the concert of Europe, territory conquered by the most powerful sovereign of the continent. In 1885 the same principle was applied to the peaceful partition of Africa in the Berlin-Congo conference in which the United States shared. Western

Asia has been the repeated witness of the acts of the concert of Europe and the affairs of Eastern Asia will not be peaceably or permanently settled until it speaks. For over eighty years there has been growing this international tribunal, with all its faults and limitations, recognizing the necessity of regarding the interests of all and ostensibly both justice and humanity rather than any individual sovereign rights. It has prevented war over the partition of Africa, the only continent peacefully divided by Europe. Its peaceful influences promises to increase. Unconsciously when we adopted the Monroe Doctrine we excluded its working from the western hemisphere, but nations like individuals are responsible for the consequences as well as the intent of their acts. We began by excluding European colonization. We went on in Mexico to prohibit the erection of any government by foreign aid. In Venezuela we laid down the principle in territorial disputes between any European power, though it were England herself and an American state, that the right of the stronger should not prevail, but that the difference should be settled by arbitration and by law. With the acceptance by England of arbitration in Venezuela, Europe withdrew from the western world.

This forces on this country the alternative of either supplying the place of the concert of Europe in the Americas, or of leaving this hemisphere a no man's land where no authority exists and no common law is recognized as superior to the injustice or inhumanity, the oppression or the aggression of individual sovereignties. This august duty we only can

discharge and we can share it with none other. The increment of our population in any two years is greater than the total population of any one American country, except two, Mexico and Brazil, and our increase in ten years is larger than the population of either of these, while our total population is greater than that of all the Americas put together by 10,000,000. This difference of population but faintly expresses the disproportion of resources of the power of responsibility.

Through seventy years we have been approaching this new national duty, and when the condition of Spanish administration, for which we had made ourselves responsible by our own act through the guarantee of every President and every Secretary of State from Monroe and Adams to Grant and Fish, required interference, we acted not in our sovereign capacity as equal to Spain, but as representing the higher necessities of international law and standing in the west in a place analogous to that of the concert of Europe in the east. No one doubts that if the revolt in Sicily, which began in December, 1895, at about the same time as in Cuba, had reached the same condition as that island, the concert of Europe would have interferred. We cannot leave the westeru world alone unarmed to enforce justice, and protect the claims of humanity. The ascending curve of our own history meets this ascending principle of international law, practiced through the century by Europe and together they form an arch strong enough to bear the tramp of armies in the service of law and of humanity. The precise steps by which we reached

this decision I do not enter on now because they are neither history or politics. The declaration of war has taken them outside of the arena of contemporary discussion and history has not yet begun their common study, but you and I know as students of history, that there is never a crisis in which it is not possible to see some opportunity for adjustment when the final blow is struck. It is not by the nutations of the poles but by the sweep of planet or nation on its orbit that we calculate eclipse and justify war. I am not asserting that the law, which I have discussed, was the conscious guide of the nation. As I have said the laws guiding nations like those of nature are discovered not by enactment and declaration, but by experiment and observation. But at least I ask you to note how fully our action accorded with this principle of law. We refused to make a national grievance like the explosion of the Maine the cause of war. We accepted the facts which show that an independent sovereignty was not yet cre ated in Cuba. We sullied our claim by no plea of material loss and damage. Acting as judges of these western lands, we pledged ourselves not to occupy Cuba, the object of adjudication, and we jealously and justly left ourselves free in regard to the other fruits and results of war, whatsoever they might be, near or distant, from Porto Rico to the Philippines. Nor was there lack of that providential preparation by which nations are prepared for crises, commencement and graduation in new duties. In England I find from the press, by letters and from personal acquaintances, that sympathy with us largely springs

from gratitude; that while England was unable to interfere in Armenia, for the concert of Europe consists of six nearly equal powers, the other branch of the English speaking race was not forced to keep its sword sheathed when both justice and mercy called. If we acted, no one can, I think, doubt that much was due to the training which we had received, watching impotent Europe face to face with the unparalleled crime of Armenian massacre. For three years Providence held this object lesson before us, and when the hour struck for us, we knew our duty.

I am the son of an American missionary in Turkey. My boyhood was passed in two cities since ravaged by massacre. Two of my schoolmates with whom I sat, sealed their witness to their faith with their blood after unimaginable torture. For weeks I sat in my quiet home in Philadelphia and read letters which told of the unutterable woe of the wives and daughters of life-long friends. There are to us all moments when we feel for our land as a "lover and a friend," but I have known none of more tearful joy than when I read from a letter from a friend in one of those cities, whose name for obvious reasons I do not disclose, but in which on a stark November day there lay long windrows of men slaughtered for their faith, which ran: "The victory at Manilla has had a good effect here. It has depressed the Turks and encouraged the Armenians. Both look upon it as the triumph of humanitarianism."

This high duty as the court of last resort, supreme over all sovereignty, we have not sought and cannot refuse. Nothing shows more distinctly our

consciousness of the true character of our duty than the fashion in which the nation has addressed itself without regard to material advantage. These things come not by logic and reason, but from a higher source.

"This is the mystery in the soul of state,
"Which hath an operation more divine,
"Than breath or pen can give expression to."

If first in Venezuela and next in Cuba we were acting solely for our material advantage, no defence can be made, but when we accept the position that we were discharging a duty demanded both by justice and our position as the supreme arbitrator of the hemisphere, called to it by the same providence which has made us great, strong and safe, then it is clear that we have no right to ask, in meeting this duty, what is it worth, any more than law or courts can consider the relative expense of enforcing justice. The generation to which I belong, and most of those about me, has had the work of preparation and transition; the generation before us did the work of preserving the union. The generation to which you belong will see this new national duty in operation. All our efforts as citizens in behalf of a "more perfect union" have been in the past inconceivably dignified by their relation to the great experiment in popular government by which free institutions must stand or fall. But this new national duty sheds a new radiance and high significance on every act of citizenship. Each worthy act prepares the nation for its work of enforcing justice, arbitration and law in the world of the west. In the many fortunate auguries

for the Republic due to the education of women in the last twenty-five years, I know none more fortunate than the circumstance that while educated women once agitated for rights, to-day educated women are asking to discharge duties. We heard much from them once of female suffrage; we hear most to-day of reform in education and in civic affairs, of better schools and of clean streets. The advancing woman once sought personal privilege; to-day she seeks social service. Into this service you enter to-day equipped, educated and I trust inspired by the consciousness that your every labor is not only laid on the altar of national devotion, but aids in the development of a nation called to the duty of enforcing justice and protecting humanity in two continents.

On the success of women in the new work of reform in which they have entered, rests the redemption of our local government. And from these must come the redemption of the union. In no other land is this more necessary for two democracies of differing type and tendency are before us in the two branches of the English speaking race. In England, through all the workings of the state, as Mr. and Mrs. Sidney Webb have shown no less in the trade union than in parliament, the drift is for the mass to select experts to do their work. In one of Mr. Gladstone's cabinet every member but two had been through a double-first at Oxford, or a Senior-wrangler at Cambridge. Our own democracy moves in a different direction more difficult of attainment I devoutly believe and better worth attaining. We have preferred to adopt what Plato called scornfully in the

Republic a theatrocacy in which every spectator assumed responsibility for the decision in progress. For good or for evil we have determined to commit all to the decision of all. Not one of us but has seen issues which we deemed could only be passed on by experts, cast into the boiling caldron of universal suffrage and triumphantly emerge clad in the youth of eternal liberty. But the adoption of this scheme and type of national life gives every educated person the responsibility of using their talent and their power to educate and advance the general level. Always a duty this becomes now of paramount importance when the nation is forced to address itself to the critical problems afforded by this evident determination to assume responsibility for oppression, aggression and wrong in this hemisphere.

There are doubtless those within the sound of my voice who shrink from their stupendous responsibility, but the die has been cast, the decision has been made, the responsibility has been incurred and it remains only for each of us through this war and in the years of peace which follow, as educated men and women to develop and guide the nation so that it may be equal to its new national duties. For all of us the ship of state plows its way through new seas:

"Cras ingens interabimus aequor."

In its new voyage with justice at the prow and prudence at the helm, a triumphant and peaceful voyage is certain, and from the bridge some signal like that of Dewey at Manilla, no mere rhodomontade like "Remember the Maine" falsely attributed,

but the flags which really flew from the signal halyards of the Olympia: "Keep cool and obey orders." "Keep cool," in the discharge of the new national duty, "keep cool" from partisan strife, from national ambition, from personal self seeking, from vague theory and "obey orders," the orders of that heavenly justice by which countries grow great and peoples prosper. So moving, as it was with the fathers, so may it be with the sons. As with the mothers, so with the daughters.

TALCOTT WILLIAMS.

TWO ADAPTATIONS OF SHAKSPERE.

I give the results of an examination of two adaptations of Shakspere, Otway's of *Romeo and Juliet* and Hawkins' of *Cymbeline*. The first held the stage for sixty years, the second was the product of a scholar of eminence in his day. The most evident thing about both adaptations is the amusing contrast between Shakspere's poetry and the efforts of his revisers to rival it. I have confined my attention, however, to an examination of the ways in which the two versions throw light on the literary taste and theories of their times. I have tried to show how Otway's alterations are typical of the restoration heroic tragedy and how they illustrate the beginnings of the eighteenth century poetical vocabulary; and I have considered Hawkins as an extreme example of devotion to the pseudo-classic dramatic theory.

I. Otway's History and Fall of Caius Marius.

Otway's tragedy, *The History and Fall of Caius Marius*, was first acted in 1680. The main action of the play deals with the dissensions of Marius and Sulla; and with this I have nothing to do. The secondary action deals with the love of the younger Marius for Lavinia, daughter of Metellus, a leader of Sulla's party; and for this part, Otway, as he con-

fesses in the prologue, has robbed Shakspere of half a play. A considerable portion of Lavinia's and Marius' lines are copied almost word for word from Juliet's and Romeo's; and a lesser portion of Sulpicius' from Mercutio's. The nurse is a still closer copy of Shakspere's character.

The plot is consideraby altered. Marius has no first love, corresponding to Rosaline; there are no interviews with Friar Laurence; there is no part corresponding to Tybalt's. In the death scene Marius lives until after Lavinia awakes, and Lavinia lives long enough after his death to do a good deal of declaiming. Earlier in the play there is another digression from Shakspere; Lavinia leaves her home to avoid marrying Sulla and meets the exiled Marii in a wood.

This addition is evidently made in order to give a touch of tenderness to a situation full of tragic suffering. The conception of Lavinia's part is that of the type so familiar in the Elizabethan drama and particularly in Beaumont and Fletcher; the extremely tender and loving maiden who leaves home to serve her distressed lover as a page. Lavinia does not, to be sure, wear boy's clothing, but a few quotations will make plain her resemblance to her Elizabethan prototypes.

> "I've wandered up and down these woods and meadows
> Till I have lost my way.
> Against a tall, young, slender, well grown oak
> Leaning, I found Lavinia in the bark.
> My Marius should not be far hence."

* * *

"I come
To bear a part in everything that's thine,
Be't happiness or sorrow. In these woods
Whilst from pursuing enemies you're safe,
I'll range about, and find the fruits and springs,
Gather cool sedges, daffodils and lilies
And softest camomile to make us beds,
Whereon my love and I at night will sleep
And dream of better fortune."—*Act IV. Sc. 2.*

Thus a bit of pretty sentiment is added to the stories of youthful passion and Marius' downfall in a fashion quite typical of the heroic tragedy of the restoration. This play belongs, then, with the melodrama which precedes the pseudo-classic tragedy.

In another respect, also, it resembles the type of tragedy, transitional between the Elizabethans and *Cato*. It not only deals with a wide variety of emotions, it also has a distinctly comic element. The parts of Mercutio and the nurse are both retained and the latter considerably increased. Otway is, indeed, so anxious to make the nurse funny, that the character loses all naturalness and becomes merely farcical. For example she announces Juliet's death as follows:

"Your only daughter's dead.
Dead as a herring, stock-fish or door nail."
—*Act V. Sc. 2.*

In the parts of Lavinia and Marius, he has added a good deal of his own and omitted a good deal of Shakspere's loveliest poetry and condensed more. Some of the additions show the tendency toward balanced rhetorical declamation which already existed.

This declamation is indulged in without any regard for consistency of character. For example: in the first scene of the play, after Metellus has threatened to banish Lavinia from his house, she delivers the following oration:

> "Will you then quite cast off your poor Lavinia
> And turn me like a vagrant out of doors
> To wander up and down the streets of Rome
> And beg my bread with sorrow? Can I bear
> The proud and hard revilings of a slave,
> Fat with a master's plenty, when I ask
> A little pity for my pinching wants?
> Shall I endure the cold, wet, windy night
> To seek a shelter under dropping eves,
> A porch my bed, a threshold for my pillow,
> Shiv'ring and starv'd for want of warmth and food?
> Swell'd with my sighs and almost chok'd with tears,
> Must I at the uncharitable gates
> Of proud, great men implore relief in vain?
> Must I, your poor Lavinia, bear all this
> Because I am not mistress of my heart
> Or cannot love according to your liking?"
>
> —*Act I. Sc. 1.*

It is certainly rather startling to find Lavinia declaiming thus in one scene and in the next speaking the poetry of the balcony scene.

Sometimes the added declamations are decidedly moralizing, so moralizing and with so little provocation that they suggest the kind of taste which later found an exponent in Rymer. For example: Marius thus delivers himself on the nurse's garrulity:

"How happy is the evening tide of life
When phlegm has quencn'ed our passions, trifling out
The feeble remnant of our silly days
In follies, such as dotage best is pleased with,
Free from the wounding and tormenting cares
That toss the thoughtful, active, busy mind!"
—*Act III. Sc. 1.*

Sometimes the declamation is pure rant. So Lavinia on Marius' death ends an eighteen line speech with:

"Oh! I could read these walls with lamentation,
Tear up the dead from their corrupted graves,
And daub the face of earth with her own bowels."

She dies with the following:

"This sword yet reeking with my father's gore,
Plunge it into my breast: plunge, plunge it there
And let rage, distraction, and despair
Seize all mankind, till they grow mad as I am."
—*Act V. End.*

Obviously this is not the Elizabethan rant which came from an imagination that broke from all control; this is the restoration rant which came from a deliberate effort to mimic extraordinary passion. This is kind of stuff that Otway was willing to place side by side with Shakspere's "extravagancies," the kind of stuff with which he "heightened" and "ornamented" Shakspere's death scene.

So much for his addition: I come now to the parts of Shakspere's play which he retained with only verbal modifications. In these Otway usually does not try to "heighten" Shakspere, but rather to "reg-

ulate" him, and there is considerable that is significant in illustrating the change then taking place in the poetic vocabulary. The lines of the nurse and Sulpicius (Mercutio) offer little of importance, although the Queen Mab speech is decidedly altered; but in the dialogue of Marius and Lavinia, Shakspere is frequently toned down to the taste of the time.

I merely give a list of the direct alterations of most importance. In the balcony scene Marius, junior, begins

> "He laughs at wounds that never felt their smart.
> What light is that which breaks through yonder shade?"
> —*Act II. Sc 2.*

Apparently "shade" was thought an elegant substitute for "window." Shortly afterwards, one of Shakspere's similes gives way to a conventional one.

> "For thou art
> As glorious to this night, being o're my head,
> As is a winged messenger of Heaven
> Unto the white, upturned, wandering eyes
> Of mortals that fall back to gaze on him."

is changed to

> "As glorious to this night as sun at noon
> To the admiring eyes of gazing mortals."

In Juliet's lines beginning

> "'Tis but thy name that is mine enemy,"

the passage

> "It is nor hand, nor foot,
> Nor arm, nor face, nor any other part
> Belonging to a man."

is omitted.

"Romeo doff thy name," becomes "Marius, lose thy name." The avoidance of the specific and the preference for the common place or conventional is, indeed, marked throughout the alteration. Lavinia ends by saying, "Take all Lavinia," instead of Juliet's "Take all myself;" and in general the use of proper names, "my Lavinia, thy Marius, etc.," is noticeable. The rest of the balcony scene is much condensed, but Shakspere's language is retained except for the following changes. Romeo's

> "Call me but love, and I'll te new baptized;
> Henceforth I never will be Romeo."

changes for the conventional line

> "Call me but thine, and joys will so transport me,
> I shall forget myself and be quite changed."

Romeo's "dear saint" becomes "dear creature."

Juliet's "What man art thou that thus be screen'd in night
So stumblest on my counsel"

becomes "Who art thou, that thus hid and veil'd in night
Hast overheard my follies?"

Romeo's "I would adventure for such merchandise"
becomes "I'd hazard ruin for a prize so dear."
Juliet's "farewell compliment" becomes "farewell all such follies."
Romeo says

"Lady, by yonder blessed moon I swear;" but

Marius: "By yon bright Cynthia's beams that shine above:"
Romeo: "If my hearts dear love" and
Marius: "Witness, all ye powers."

"I have no joy of this contract to-night,"

sinks into

"I'm hardly satisfied with this night's contract."
"And yet I would it were to give again"

becomes "And yet I wish I could retrieve it back."

"Bondage is hoarse, and may not speak aloud"

becomes merely

"Restraint has fears."

An even more marked example than the last of the change from the specific to the general, is the alteration of,

"And with a silk thread pluck it back again."

into "To pull it by its fetters back again."

Juliet's "parting is such sweet sorrow" is transferred to Marius and amplified into

"There's such sweet pain in parting
That I could hang forever on thy arms
And look away my life into thy eyes."

(*Act III. Sc. 2.*) In Juliet's soliloquy beginning, "Gallop apace, you fiery footed steeds," "waggoner" becomes charioteer; "garish sun" becomes "gaudy sun"; and Lavinia asks the nurse.

"How fares the lord of all my joys, my Marius?"

Act IV. Sc. 1. In the parting scene,

"What envious streaks
Do lace the severing clouds in yonder east?"

becomes "What envious streaks
Of light embroider all the cloudy east?"

"And jocund day
Stands tiptoe on the misty mountain tops"

changes to "Upon the mountain tops sits gaily dressed'
Whilst all the birds bring music to his levee."

The change in metaphors here is surely very typ-

ical of the change in the times. The lord, gaily dressed for his levee, was doubtless a more brilliant spectacle to the restoration poet than the morning light on the mountains.

Juliet's speech beginning, "It is, it is, hence away, begone," changes to "Fly hence, away my Marius," and ends with,

> "Or that a lethargy had seiz'd the morning
> And she had slept and never wak'd again
> To part me from th' embraces of my love."

Juliet's "Methinks I see thee, now thou art below
As one dead in the bottom of a tomb"
becomes "Now thou art from my arms
Like a ghost, with horror in thy visage."

Many of these changes point directly to the wide difference between Shakspere and Otway. At the same time, a slight consideration is sufficient to show that the changes illustrate the conventionalization of the poetic vocabulary which had begun by Otway's time.

It will be noticed, for example, that there is no instance of a change from a general to a specific phrase, but on the contrary specific words are often changed for words of more general significance which were thought more usual in poetic expression. Thus "doff," "waggoner," "silken thread" are avoided. Again in the description of emotional states specific words are likewise avoided, and words of vague and general meaning substituted, such as "joys," "fears," "follies." Still further, metaphors are apparently regarded as matters of conscious rhetorical decora-

tion, and preference is given to those whose elegance had long been authenticated by poetic usage. Thus we have, "joys transport," "veil'd in night," and "bright Cynthia's beams."

It must be remembered, moreover, that these changes were all made with deliberation. Otway had the text of Shakspere before him and did not hesitate to copy long passages without alteration. When he did make a change, he must then have had some definite motive; and the examples cited show how much he was influenced by the taste of the time. The pseudo-classic poetic vocabulary already had its beginnings.

In the play as a whole, Lavinia thus becomes a curiously incongruous piece of patch-work. There is the scene in which she appears as one of Beaumont and Fletcher's sentimental maidens. There are long passages in which she is Shakspere's Juliet except for occasional lapses into the conventionalized dialect of Restoration poetry. Finally there is a much greater portion of the play than the space I have given to it would indicate in which she is merely a mouth-piece for balanced declamation or prodigious rant. In this aspect she is no longer Shakspere's child of passion; she is the stage heroine of the Restoration melodrama.

The very change in the name suggests the nature of the entire alteration. It is not Juliet, it is Lavinia, "Marius' dear Lavinia," who thus describes herself:

> "I am Lavinia, born of noble race.
> My blooming beauty conquered many hearts,
> But proved the greatest torment of my own:

Though my vows prospered, and my love was answer'd
By Marius, the noblest, godliest youth
That man e'er envied at, or virgin sighed for."
—*Act V. Sec. 4.*

II. Hawkins' Cymbeline.

The *Cymbeline* of William Hawkins was acted at the Covent Garden theatre in 1759 and published during the same year. Its stage presentation encountered many difficulites, chief of which was the withdrawal of the leading actress, and the play ran for only six nights. Hawkins was professor of poetry at Oxford, a scholar of apparent distinction at the time, a translator of the Aeneid, and an author of two other tragedies and several volumes of miscellanies and poetry. He was professedly a student and an admirer of Shakspere; and sought in his version of *Cymbeline* to remove the irregularities, to remodel the play in conformance with the unities, and at the same time to preserve Shakspere's diction.

A quotation or two from his preface will more plainly indicate his intentions.

"The Tragedy of Cymbeline is, in the whole oeconomy of it, one of the most irregular productions of Shakespeare. Its defects, however, or rather its superfluities, are more than equalled by beauties and excellencies of various kinds. There is at the same time something so pleasingly romantic, and likewise so truly British in the subject of it, that I flatter myself an attempt to reduce it, as near as possible to the regular standard of the *Drama* will be favorably

received by all admirers of *novelty* where *Propriety* is its foundation. I have, therefore, endeavored to new-construct the tragedy almost upon the plan of *Aristotle* himself in respect to the *unity* of Time, with so thorough a veneration, however, for the great *Father* of the *English Stage* that, even while I have presumed to regulate and modernize his design, I have thought it an honor to tread in his step and to imitate his *Stile* with the humility and reverance of a *Son*. With this view, I have retained in *many* places the very language of the original author and *in all others* endeavored to supply it with a diction similar thereunto; so that as an unknown friend of mine has observed, the present attempt is *new* whether it be considered as an *alteration* from or an *imitation* of Shakespeare." * * *

"After all I am very far from meaning to detract from the merit of Shakespeare or from insinuating that the plays of so exalted a genius require such new-modelling as the present in order to have the rendering them useful or entertaining. I have ventured publicly to defend the great *dramatic* Poet on the liberties he has taken, but still Shakespeare, himself, need not be ashamed to *wear a modern dress* provided it can be made tolerably to fit him."

The observance of the unities was a favorite foible of the pseudo-classic dramatic theory and was Hawkins' first care. He manages the unity of time well enough and comes somewhere near the unity of place by omitting the Italian scenes and confining the action to the King's palace and the cave in Wales or places near it. By omitting the comic scenes

where Cloten figures, the attempted seduction and the bedroom scene, he also succeeds in "regulating" the action.

This effort to regulate the action led him, indeed, to a complete remodelling of the plot. A mere buffoon like Cloten would by no means do for an eighteenth century tragedy, so Cloten becomes a serious villain. He is also a traitor to the Britains and in league with the Romans; and the Roman war is made distinctly the central action. The Queen is apparently regarded as an unedifying monster and is excluded from the play. Pisanio is made a tool of Cloten and takes the part of Shakspere's Jachimo. Eventually he is killed in accord with poetic justice. The bedroom scene and the manner in which he persuaded Leonatus of Imogen's guilt, are presented by narration, a favorite device of the pseudo-classic drama. The scenes at the cave are much the same as in Shakspere, except that a new character, Philario, is introduced. He is instructed by Leonatus to kill Imogen; has several long arguments with himself on the question of her guilt; and finally threatens her with death in order to test her innocence, but administers a sleeping potion instead of poison. The final disentanglement occupies the entire fifth act and is managed in part by a letter to Leonatus which the dying Pisanio gives to Palador, one of Cymbeline's sons. This reconstruction of the plot is managed with little dramatic skill, but is a consistent enough effort to follow the principles of the pseudo-classic theory.

When we come to the text itself, it is hard to

find any signs of consistency. The style is neither Shakspere's nor Hawkins', neither of 1610 nor 1759; it is an amazing combination of efforts to improve and to imitate Shakspere; on the one hand to dress his rude genius in modern clothes and on the other to outdo him in extravagant brilliancy. Sometimes Hawkins retains Shakspere's exact words; sometimes he combines lines from half-a-dozen different speeches into one; sometimes he goes to other plays than *Cymbeline* for Shakspere's phrases. He rearranges speeches, lines, and even phrases and still retains Shakspere's words. Often he keeps the words when his rearrangement destroys the rhythm, and often he writes an imitating style which is about as much like Shakspere's as a well-shaken box of words from a Shaksperian glossary would be. At other times, by frequent quotation and by means of his evident knowledge of Shakspere's vocabulary, he does manage to produce a fairly clever imitation. Often, too, he utterly discards his avowed purpose of retaining Shakspere's diction and writes an ordinary declamatory eighteenth century style.

Such a hodge-podge of a style does not readily submit to analysis. However, by noting a number of its salient characteristics, I think we may come to a clear understanding of Hawkins' attitude. Before doing this, it will perhaps be well to see what sort of verse Hawkins ordinarily wrote when he was not laboring under the hallucination that he was imitating Shakspere. A few lines from his *Eulogy on Genius* will show that he understood the methods of the rhyming couplet, and at the same time give us his own view of his character.

"For me, howe'er I covet lasting fame
And pant with longings of a poet's name,
Yet let my soul confess a nobler aim.
Give me, kind Heav'n, still higher points to reach,
Give me to practice what I strive to teach.
My standing rules of daily practice be
Faith, honour, justice, candour, charity!
Careless of false reproach or vain applause,
Be worth my eulogy and truth my cause.
O may I wield an independent pen,
A friend to Virtue, not a tool to men;
In perseverance placing all my glory
While Tories, Whigs and all men call me Tory!"

This was the poet who dared declare in his prologue.

"Britons, the daring author of to-night
Attempts in Shakespeare's manly stile to write.
* * *
Happy the varied phrase, if none shall call
This imitation, that original."

To turn now to his imitation, we find something very different from these balanced couplets. Here is a fairly typical example:

"Deal we then our swords
With dextrous resolution, or hereafter
Let them hang up, like utensils discharg'd,
In rusty sloth and vile disuse forever.
The gore-besmeared Mars infuse his fury
Into our soldiers' breasts; for our own self:
We go to battle with a blither heart
Than e'er did jovial bridegroom long repulsed
Into his mistress' bed. Sound then aloft
Our instruments of war, that British blood
May boil to martial music. Forward: pass!"

—*Act I. Sc. 1.*

Here is Leonatus' declamation on Imogen's death, evidently intended as an imitation of Shakspere's extravagance.

> "I see her now
> Bloody and pale she looks—her snow-white breast
> Is soil'd with clotted gore—her jetty locks
> Are turned to fury's snakes—and in her eye,
> At whose kind beams glad Hymen lights his torch
> Like fiery vengeance now with direful look
> Chilling my faculties."—*Act I. Sc. 1.*

A still more grotesque endeavor after Shakspere's extravagance is:

> "liquored noddles
> Jostled to hear my tale."—*Act I. Sc. 1.*

Once he introduces a remodelled passage from *Troilus and Cressida.*

> "By Jove multipotent there's not a couple,
> Whose praise fame trumpets with his loudest
> O, yes,
> That can out-peer this twain."—*Act III. Sc.* 3.

Often the verbal similarity to Shakspere's mannerisms is considerable as:

> "Pardon old man, our ignorant intrusion
> Upon your venerable solitude."

Sometimes he completely out-Shaksperes Shakspere, as:

> "Cloten: the name is ominous—it bodes
> More than the raven's sullen flap that scents
> Cadaverous infirmity."

So he changes Shakspere's:

"He that strikes
The venison first shall be lord o' the feast."

to "He who brings
The largest fardle home is lord'o the feast."

—*Act II. Sc. 2.*

And "How hard it is to hide the sparks of nature"
into "Thou divis'st nature, how thyself
Thou blazonist."—*Act II. Sc. 2.*

These examples will, perhaps, serve to indicate the nature of this eighteenth century attempt to write in Shakspere's style; evidence of eighteenth century taste may be seen more specifically in some examples which I have grouped under eight heads.

In the first place there are a number of minute alterations for the purpose of giving the blank verse a more precise and regular form. Thus

"Which by thee lately
is left untendered"

becomes "Which by thee lately is untendered left."

—*Act I. Sc. 1.*

So again with a more marked feeling for precise balance,

"So fair an outward and such stuff within"

becomes "So fair an outward and such inward stuff."

—*Act I. Sc. 1.*

In the second place there are a number of changes from specific to general expressions, such as have already been noticed in Otway. So in Cloten's "for wearing our own noses," (Cymb. III, 1, 14)

"faces" is substituted. (Act I. Sc. 1.) Shakspere's "the bier at door" becomes "Fate at door " and

"Thus smiling as some fly had tickl'd slumber"

becomes "And smiling thus as if the dart of death
Had gently tickl'd slumber."

Bellarius "good morrow to the sun" changes to "obedience to the sun" and

"train'd up meanly
I' the cave wherein they bow"

becomes "Train'd thus merely up among
These desert rocks."—*Act II. Sc. 2.*

In the third place, two or three similar verbal changes may be grouped together. In the passage

"Why tender'st thou that paper to me with
A look untender."

the play on the words is not to Hawkins' taste and for "tender'st" he substitutes "offer'st." Leonatus' simile "as chaste as unsunned snow" is not quite to Hawkins' taste either, and he alters that and puts it in Imogen's mouth:

"Have I been chaste
As snows that sunbeams never kist for this?"
—*Act II. Sc. 3.*

A little elegance is likewise added to the line

"To have turned my leaping time into a crutch,

which becomes

"And turned my warlike spear into a crutch."
—*Act III. Sc. 4.*

Fourthly, as an evidence of eighteenth century

taste, the classical allusions are rather significant. Hawkins adds a great many, very obviously with the view of ornamentation. The most remarkable of these bits of classical decoration is that given to the untutored Palador when he first sees Philario and Imogen. The British youth remarks:

> "They are the Gods that come
> In visitation to our hermitage.
> The eldest is God Pan, the other seems
> Like swift leg'd Mercury—or the God of Love
> Drest in his mother's smiles."—*Act II. Sc. 4.*

Fifthly, the dirge sung over Fidele shows several changes all in perfect accord with the conventionalized taste of Hawkins' time. I give the two first verses as they appear in Shakspere, and then as they appear in Hawkins.

> "Fear no more the heat o' the sun,
> Nor the furious winter's rages;
> Thou thy worldly task has done,
> Home art gone, and ta'en thy wages:
> Golden lads and girls all must
> As chimney-sweepers, come to dust.
>
> "Fear no more the frows o' the great,
> Thou art past the tyrant's stroke;
> Care no more to clothe and eat;
> To thee the reed is as the oak.
> The sceptre, learning, physic, must
> All follow this, and come to dust."

Note now Hawkins' changes.

> "Fear no more the heat o' the sun
> Nor the furious winter's blast,

Thou thy worldly task has done,
And the dream of life is past.
Golden lads and girls all must
Follow thee and come to dust.

"Fear no more the frowns o' the great;
Death doth mock the tyrant foe
Happiest is the early fate
Misery with time doth grow;
Monarchs, pages, peasants, must
Follow thee and come to dust."

The fourth line of the first stanza and the second, third and fourth of the second stanza exhibit eighteenth century poetical taste in a nut-shell. These four lines at once show a preference for the general to the concrete, a preference for well-worn phrases rather than new and concrete ones, and an ever present delight in common place moralizing.

Moreover, the waywardness of mood in Shakspere's song that comes from his half-playful use of familiar words and images in the midst of tragedy, completely disappears in Hawkins' version. The exquisite diversity of emotions, the mingled smiles and tears, give place to mere conventional monotony. Diversity, indeed, was not a grace whom the pseudo-classicists pursued; they remained content with that old prude, Propriety.

Sixthly, Shakspere's description of Bellarius and his sons is much changed. The often noted avoidance of the concrete and the delight in balanced antitheses are well illustrated in the alteration of Bellarius' first speech in Act II. Sc. 3. In Hawkins it appears as follows:

"Our life, my boys, is such as mortals led
Ere living was an act. The busy knaves
That clatter in yon world, are mad to purchase
Honour with danger, wealth with envy, pleasure
With manifold infirmity; while we,
Poor in possession, in enjoyment rich,
Have no more wants than means; our avarice is not
Wider than our stomachs; our ambition
Who first shall scale the steepy mountain cliff
Or strike the destin'd venison, this our life
And health—the life of life."—*Act II. Sc. 2.*

After Palador kills Cloten, he declaims in a style which one feels sure, Hawkins prided himself out did Shakspere.

"This is the sport
Hotter than hunting—I will kill no more
The tim'rous deer—such killing's cowardice.
My reeking sword sweats honorably now,
Thou poor loud boasting fool! Hah! how I shall
In triumph round thee—like the victor lion
Slow pacing 'bout the mangled tiger's corse
And grimly taking solace in his slaughter!"

In the seventh place, the passages dealing with the Roman war are infused with a good deal of patriotic oratory full of cant phrases about Britain and liberty. The following passages will do for examples:

"O for the time
When Britains bold shall throng the streets of Rome;
And breathe strange climes that conquest make their own."

"For I will fight
For liberty and Britain, till the blood
Be drain'd thro' all my veins."

Finally I shall note some of the characteristic additions which Hawkins makes to the Imogen-Leonatus story. The character of Imogen undergoes many changes. Her broken, impatient speeches in Act III. Sc. 2. are nearly all omitted, and some very common place lines substituted. At the end she cries

"I will quit
This castle's loathsome hold."

The fourth scene of the third act, in which Pisanio makes known the command of Leonatus that he murder Imogen, is also much changed by Hawkins. Philario who is substituted for Pisanio, is a very argumentative fellow who spends a good deal of time speculating with himself as to Imogen's innocence, often in a fashion as ludicrous as this:

(Aside) "Is her amazement innocent or guilty?
Tell me some God—for sure a mortal wit
May else misconstrue such perplexity.
(To Imogen)
Madam, what cheer? Are you prepared to die?"
—*Act II. Sc. 3.*

Imogen, too, indulges in some very spirited declamation;

"Gods! have I left my father's gilded roof
The rights of birth, the largesses of fortune,
The pageants of pre-eminence, and all
That womanhood is said to doat on, yea
And womanhood itself? Have I left these,
No jewel taken with me but my honour
To hear him false? Oh! Oh!"—*Act II. Sc. 3.*

Imogen is made to indulge often in this sort of

rhetorical gymnastics. When she sees Bellarius, she cries:

> "In his visage sits
> The treasured wisdom of an hundred years;
> The sages of old times are pictured there.
> Accost him, good Philario, for his presence
> Awes my unskillful heart."—*Act II. Sc. 4.*

With so much of this kind of ornamentation, of course Imogen's character loses all its spontaneity. Hawkins is not content, however, with merely adding occasional declamation; he also finds it necessary to improve on Shakespeare's picture of love with some amazing pieces of sentiment. While Leonatus and Imogen are embracing, Philario breaks forth:

> "You that ne'er lov'd, look on that virtuous pair
> Mark how he anchors upon Imogen.
> See, how she hangs on Leonatus' arm
> While both are mute in sweet extremity
> Of truest love and joy."—*Act V. Sc. 1.*

Shakespeare is content to make Leonatus say:

> "Hang there like fruit, my soul,
> Till the tree die!"

Hawkins makes him respond to the foregoing speech of Philario with this outburst:

> "Joy, who names joy?
> It is a word too cold. What heav'n shall be
> Hereafter, I feel now. Whom had I lost
> But Imogen? Whom did I hold corrupt
> But Imogen? Whom did I drive to death
> But Imogen? Yet Imogen is found:

Yet Imogen is purer than the star
That leads her train to light the morn;
Yet Imogen still lives and lives to love me.
Divide all matter of discourse among you
What can I say or think but Imogen?"—*Act V. End.*

The passages quoted under the last three heads are perhaps sufficient to indicate the character of most of the additions with which Hawkins supplemented Shakspere. It must be remembered that a large portion of the play is made up of such additions, that to make room for them a great deal of Shakspere's poetry is omitted, and that few of these added passages are necessary for the purposes of dramatic narration. They are largely mere pieces of ornamentation; like the verbal changes noticed, they serve to give what the eighteenth century critics called "elevation of style."

Still farther, these bits of rhetorical decoration served to make the drama to Hawkins' mind more typically, more abstractly, a representation of life. Rymer himself might have given his approval to many of them. To us, indeed, they seem merely sentimental, passionate, patriotic, or moralizing declamations of a very artificial and absurd kind, but for the pseudo-classicist they added to the instructive value of the tragedy. The argumentation over Imogen's chastity, the exhortations to fight for liberty, the continual pointing of a moral, all served to give the tragedy a value in their conventional system of morals and their abstract view of life.

Hawkins, in spite of his fondness for an Elizabethan vocabulary, was true to the pseudo-classic

theory of the drama; and the attitude which he constantly maintained toward Shakspere is significant mainly in the light of that theory.

"Here," he seems to have said, "is a play of Shakspere's, undubitably the play of a master-genius, but lacking the refining touch of art. Had Shakspere known our rules of drama and poetry, he might have perfected it himself; since he did not know the rules of art, some one who does might well undertake the task." "There are a few evident changes necessary;" Hawkins may have continued, "unities of time and place must be observed, the incoherent action must be reduced to regularity, the comic buffoon must be eliminated, and Jachimo must be punished—so much for the construction. As for the style Shakspere's diction ought to be retained as far as possible; but when he wrote carelessly, the lines may well be remedied. A good many of his jewels need polishing and ordering. When his style becomes vulgar, it may well be heightened. Moreover, numerous passages should be added to ornament the narrative and to make the play more valuable as a presentation of life's philosophy."

Now this is no unnatural attitude for a pseudo-classicist. It is perhaps a little surprising so late as 1759 and in a man who evidently knew his Shakspere well; but it is only the attitude of Dryden and earlier modifiers carried to the extreme and is in beautiful accord with the doctrines of Rymer. Speaking technically, it involves the dramatic theory of the rationalists, a theory in which abstractions reigned supreme and whose foundation was an abstract view of genius and art.

The general opinion in the first half of the eighteenth century was that Shakspere was a genius of the first class, but that he lamentably lacked art. Art was not regarded as a thing superior to genius, but it was viewed abstractly as something which might somehow be super-imposed upon a work of genius with immense improvement. Art signified the adherence to the rules laid down as final by the pseudo-classicists, supposedly on the authority of Aristotle; and the lack of knowledge of these rules by the Gothic geniuses was a subject for great regret. Shakspere was hardly more than a "sauvage ivre" who needed to be clothed. There was nothing ridiculous, then, from this point of view for a man who was master of the rules of dramatic construction and poetry to exercise his art in improving Shakspere. Hawkins did not imagine that he could compare with Shakspere in creative genius; he does seem to have thought that he could remodel one of Shakspere's plays into a more final form.

He did, indeed, bring *Cymbeline* into a form more in accord with the rules by which poetry and plays were composed in the early eighteenth century. He was true to his theory of art, but his adherence to its rules resulted in a "reductio ad absurdum." His version of *Cymbeline* is final only in showing to what lengths devotion to an abstract theory may carry a concrete pedant.

ASHLEY H. THORNDIKE.

ON THE VELOCITY OF LIGHT IN A MAGNETIC FIELD.*

At the Toronto meeting of the American Association for the Advancement of Science in 1889, Professor Henry T. Eddy discussed the partial differential equations of the motion of plane polarized light in a magnetic field. These equations contain terms "expressing the transverse electromotive force due to the Hall effect. The particular solution of these equations which Rowland proposes contains a periodic factor dependent upon the time." In Professor Eddy's paper, "a different particular solution, containing a periodic factor dependent upon the space which the ray traverses in the field, is discussed at length and compared with the solution proposed by Rowland." It is shown that the velocity of the ray would be increased if there is a periodic factor dependent upon the time, but would be decreased by a factor dependent upon the space.

In the discussion which followed the reading of Professor Eddy's paper, Professor Morley suggested a form of apparatus which would detect the suspected change of velocity, provided it amounted to one part in fifty millions. The whole matter was of

*Report of an experiment made with the aid of a grant from the research fund of the American Association for the Advancement of Science. By Professors Edward W. Morley, Henry T. Eddy, and Dayton C. Miller.

such interest that the section of the Association before which the paper was read, obtained from the research funds of the Association, a grant of money with which to construct the apparatus and make the experiment. The apparatus was finished in the summer of 1890, and Professor Eddy came to Cleveland to take part in the experiment.

The optical part of the apparatus consists of the interferential refractometer used by Michelson in his

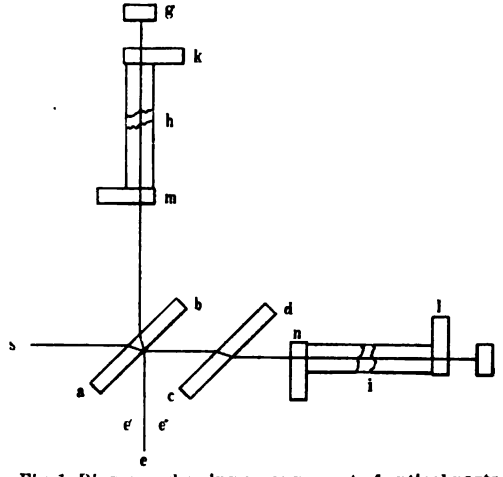

Fig. 1. Diagram, showing arrangement of optical parts.

experiments to determine whether light moves with the same velocity in different directions in the solar system. A train of waves of light from the source *s*, (Fig. 1.) is divided at the second surface of *ab*, which is coated with silver of such thickness that the division is nearly equal. If now the mirrors, *f* and *g*, are properly adjusted, the two parts reunite at *ab*,

and interference bands can be seen by the eye at *e*, if the distances of *f* and *g* from *ab* are properly related. If, now, any force acts intermittently to change the velocity of one part of the ray while the paths are separated, it may be detected by a motion of the interference bands, provided the change is not too small.

If we now put two tubes, *h* and *i*, in the paths of the divided ray, make these of very nearly the same length, and close them with plane parallel glasses of equal thickness, and fill the tubes with carbon bisulphide, we shall still obtain interference bands. If we surround each tube with a coil of copper wire, use polarized light, and close the circuit through one coil, there will be a rotation of the plane of polarization of the ray which passes through the magnetic field. Now, if the rotation be not so much as to prevent, or too much affect, the interference of the parts of the divided train of waves, a change of velocity of light while in the magnetic field will produce a displacement of the interference bands. If we complete the circuit in the two coils alternately, we double the displacement which it is sought to detect.

If any displacement is observed, it will be necessary to determine whether it may not be due to strain or displacement of parts of the apparatus. In the case of the plates *ab*, *cd*, *f* and *g*, this may be accomplished by watching the effect of closing alternately the circuits through the two coils while the tubes *i* and *h* contain only air. But a disturbance which should affect the position or length of one of these tubes needs special means for its detection.

The plates which close the ends of these tubes are accordingly placed as shown at *k*, *l*, *m*, and *n*, and are silvered except where they cover the tubes. When proper adjustments are made, the observer can see interference bands through the tube by placing the eye at *e*, interference bands at the covers of the nearer end of the tubes by placing the eye at *e'*, and interferences at the covers of the farther ends of the tubes by placing the eye at *e''*. Since the interferences produced in these three cases are due to rays which have passed through only glass and air, they can be so adjusted as to detect with ease and certainty a displacement which would be entirely insensible in the irregular and most unstable interference bands produced after a ray of light has passed through a liquid so optically unstable as carbon bisulphide. Our means of detecting the effect of mechanical disturbances were therefore greatly superior to those of detecting the change of velocity in question, and the statement that no displacement of interference bands was caused by mechanical disturbance due to the opening and closing of the current through the coils is open to no doubt.

The plates *ab* and *cd* were 9.3 by 2.0 cm; *f* and *g* were 2.0 cm. by 2.0 cm.; *k*, *l*, *m*, and *n*, were 4.3 cm. by 2.0 cm. The tubes *h* and *i* were 1.7 cm. in inside diameter, and were 38.1 cm. long. They lay in adjustable supports, and were not in contact with the coils which surrounded them. The core around which the wire of the coils was wound was rectangular in section. Around a free space of 4.2 cm. by 2.2 cm. was first a nonconducting layer of 0.6 cm. in

thickness, then a space 0.6 cm. thick for the circulation of water; and, lastly, a coil of wire. Each coil was made of two wires laid side by side, so that when the same current was sent through the two wires in opposite directions, its effect was null. A commutator was so arranged as to send a constant current through one wire of each coil, while the same current was so sent through the other wires of the two coils as to neutralize the effect of the current in the first wire of one coil, and to double it in the other coil. The heating due to the passage of the current was therefore identical in the two coils. The wire of each coil weighed about 82 kilogrammes, and the length covered by the wire was 30 cm.

The flame of a Bunsen lamp was colored by the introduction of some sodium compound as the usua source of light, because the interference bands can, in homogeneous light, more easily be given forms which permit delicate discrimination; a luminous gas flame, and the electric arc were also employed. A Nicol prism was sometimes interposed, and the plane of polarization was placed in various positions. The optical parts of the apparatus were so related that the visible interference bands coincided with the surface of the more distant mirrors; their displacement can then be detected by referring their position to lines ruled on the mirrors.

With this apparatus, one observer adjusted the interference bands in width and position; when these were made suitable, the second observer used the commutator to produce a magnetic field, first in one coil and then in the other. He announced the change

from one to the other in such a way that the first observer did not know which coil was acting, so that the effect of any possible bias might be excluded.

With this apparatus, both observers suspected a slight displacement of the interference bands, and both satisfied themselves that this displacement was in the direction which indicated acceleration in the light passing through the magnetic field. The amount of the acceleration thus suspected was not more than one part in one hundred millions. But the displacement was so slight that they could not be confident of its existence.

In the examination of the effect of a magnetic field on a ray passing through it, the appearance on making and breaking the circuit suggested the possibility of a change in the density of carbon bisulphide while in the field. There was produced a momentary displacement of the interference bands which was unmistakeable, being many times as great as the displacement which it was suspected continued as long as the current passed. It was easy to imagine that the force which quickly brought the molecules of the liquid into the new positions in which they produce rotation of the plane of polarization, might carry them beyond the position of equilibrium, to which they would quickly return. To examine this phenomenon, a thick brass box filled with carbon bisulphide was placed in each coil, and the two boxes were connected with each other and with a glass tube of small diameter. After all parts of the apparatus had come to an uniform temperature, the level of the liquid was brought to a convenient part

of the glass tube, and a current of twenty-seven amperes was sent through the two coils, in such directions as to produce a magnetic field in both coils. Each time the circuit was completed, there was a momentary rise of the liquid by 0.06 mm., and an instantaneous fall to 0.03 mm. On breaking the circuit, there was a momentary fall to —0.03 mm., and an instantaneous rise to 0.00 mm. This displacement could be well measured three or four times by means of a reading micrometer with an amplification of about sixty diameters, the probable error of a reading being less than 0.005 mm. After three or four measurements, the heat developed in the coils made it necessary to wait many hours for equilibrium of temperature to be established again. There were 380 cubic centimetres of carbon bisulphide in the magnetic field; the area of the capillary tube was 0.55 square millimetres; the lasting change of density or the change in the volume of the containing envelope was therefore one part in twenty-three million. The intensity of the field was 1650 centimetre-gramme-second units.

This matter was afterward investigated with another brass box made to fit loosely between the poles of a dynamo electric machine, whose coils had been so connected that the box was placed between a north and south magnetic pole. The material of this box was free from magnetic admixture, and was supported so as not to be in contact with any part of the dynamo. In this envelope, we have not yet been able to detect any such change of density or volume as was suspected before. The cause of the momen-

tary displacement of the interference bands which was so obvious will therefore need further examination.

At the meeting of the American Association for the Advancement of Science in Indianapolis, in 1890, Professors Morley and Eddy made a report of the result of their experiment. The matter seemed of such interest to the section that it obtained a further grant with which to continue the experiment with more powerful apparatus. Owing to other occupation, the construction of this apparatus has been delayed till the present year. With the assistance of Professor Dayton C. Miller, now associated with Professors Eddy and Morley, a new apparatus has been set up with which the acceleration or retardation produced would be three times as great as with the former apparatus. Further provision has been made for securing much greater thermal and optical stability of the carbon bisulphide used in the apparatus. As a result of these two modifications, our power of detecting small changes of velocity of light in a magnetic field is probably five times as great as in the case of the former apparatus.

The second apparatus differs from the former in two respects. The optical parts remain as before; the only difference in their use depends on the fact that the coils are now twice as long as before, so that the mirrors *f* and *g* are farther from the mirror *ab*. The tubes *i* and *h* are therefore 30 cm. longer and the column of carbon bisulphide in the magnetic field is twice as long as at first. Further, these tubes are so connected that a current of bisulphide can be passed

through them at pleasure; and around them are concentric tubes through which passes a current of water, intended to prevent the heating of the bisulphide by the passage of the electric current through the coils. A tank, placed in the room with the apparatus, supplies water at constant temperature, for this purpose; in this tank is immersed another tank, which supplies a current of bisulphide having the same temperature as the water. This arrangement for preventing changes of temperature in the column of carbon bisulphide in the tubes of the apparatus greatly increases the steadiness of the interference bands to be scrutinized, and so increases the delicacy of the observations.

The illustration taken from a photograph shows the apparatus ready for use. At the extreme right are seen the commutator, ampere meter, and resistance coils used in managing the electric current. The wooden stand at the extreme left carries the source of light and the condensing lens. The adjacent stone pier carries the coils; between them is seen the cubical block of stone which supports the diagonally placed mirrors *ab* and *cd* of Fig. 1. Apparently just above this block, but really some yards to the rear, is the double tank supplying water and carbon bisulphide to the apparatus. The reading telescope with which the observations were made is marked by the hanging cloth. On the left edge of the pier is seen an iron stand carying a Nicol's prism for polarizing the ray of light sent through the apparatus; on the wooden stand to the right of the pier is seen the analyzer, by means of which the rotation produced was

measured while the current was adjusted so as to secure the rotation desired.

When a current of twenty-seven amperes is sent through the coils of this apparatus, there is produced a rotation of the plane of polarization of light by one-half a circumference; in the previous apparatus, we could utilize a rotation no larger than about fifty degrees of arc. The rotation utilized now is therefore three and one half times as great as that in the former case, involving a corresponding increase in the change of velocity which it is hoped to detect.

With this apparatus, a current was sent through the coils at the call of the observer at the telescope. The current had been adjusted so that it should produce a rotation by half a circumference of the plane of polarization of the light employed at the time. This rotation caused the interference bands, which had been seen before the passage of the current, to shift their position by half a wave length; this was due to the reversal of phase of the ray which had suffered rotation. A micrometer wire was set on a maximum or a minimum, the current was reversed, and the coincidence of the wire with the maximum or the minimum was scrutinized. As a result of such scrutiny, often repeated, both observers are confident that there was no displacement amounting to one-twentieth of a wave length. They also are of opinion that there is no advantage to be expected from an increase in the size of the apparatus, and a repetition of the experiment with carbon bisulphide, unless it shall be kept thermally and optically homogeneous by rapid motion. If dense glass, sufficiently trans-

parent in a long cylinder, could be used in place of the bisulphide, it would probably be possible to detect a quantity which, if a liquid is employed, could not be detected except at an expense which would be prohibitory.

The result reported at the Boston meeting of the American Association is, that we are confident that when light corresponding to the solar D line is passed through one hundred twenty centimetres of carbon bisulphide in a magnetic field which produces rotation by half a circumference in the plane of its polarization, there is no such change of velocity as one part in sixty million, and probably no such change as one part in a hundred million.

EDWARD W. MORLEY.

UNIVERSITY INTELLIGENCE.

THE COMMENCEMENTS OF THE UNIVERSITY.

DENTAL COLLEGE.

The Fifth Commencement of the Dental College was held on Tuesday, May 17th, in the Association Hall, with an address by the Rev. Dr. L. A. Banks of Cleveland.

MEDICAL COLLEGE.

The Fifty-fourth Commencement of the Medical College was held on Wednesday, May 25th, in the Association Hall, with an address by the Rev. Dr. E. S. Lewis of Cleveland.

COMMENCEMENT WEEK.

The first public event of the commencement celebration was on Saturday evening, June 18th, when the Class Day Celebration of the graduating class of the College for Women took place. The class presented scenes from Shakspere's "Twelfth Night" on an open air stage erected on the campus east of Clark Hall.

On Sunday afternoon, June 19th, Eldred Hall, built for the special use of the Young Men's Christian Association, from a bequest made by the late

Rev. H. B. Eldred, was dedicated. The address was delivered by the Rev. Dr. Paul F. Sutphen, and the prayer of dedication was made by the Rev. Dr. Hiram C. Haydn, Vice-President of the University.

On Sunday evening President Thwing preached the Baccalaureate Sermon to the graduating classes of Adelbert College and the College for Women in Beckwith Church.

Monday afternoon a reception was given by the graduating class of Adelbert College in Eldred Hall.

At a later hour on the same day, the Annual Meeting of the Alumni Association of the Law School took place in the Law School building. Following the meeting, the members dined together.

On Tuesday, June 21, at 9:30 a.m., a meeting of the Trustees of Adelbert College of Western Reserve University was held at Adelbert College. At 11:30 a meeting of the Trustees of Western Reserve University was held at the same place.

The College for Women.

At half past two Tuesday afternoon, the Eighth Commencement of the College for Women was held in Calvary Church. The address was delivered by Mr. TalcottWilliams of Philadelphia.

Alumni Association of Western Reserve and Adelbert Colleges.

The annual meeting of the Alumni Association of Western Reserve College and of Adelbert College of Western Reserve University was held in Adelbert College on Tuesday afternoon at five o'clock, with the Rev. A. C. Ludlow, '84, the President, in the chair.

The following officers were elected to serve for the ensuing year: President, Professor C. J. Smith, '70; First Vice-President, Rev. E Bushnell, D.D., '46; Second Vice-President, Rev. E. P. Cleaveland, '78; Rec. Secretary, Dr. F. K. Smith, '79; Cor. Secretary, Mr. John Dickerman, '91; Necrologist, Rev. D. T. Thomas, '85.

The Board of Visitors elected for the year consists of Mr. R. Heber Wright, '63, Mr. Geo. N. Thomas, '81, and Mr. George C. Ford, '84.

The Necrologist, Rev. D. T. Thomas, reported the death of the following alumni: Dudley Allen, '32; Theodore Clark, '45; W. W. Andrews, '59; John Gardner Kennan, '79; Henry L. Hamlin, '93 and William James Mathews, '94.

Tuesday evening the Alumni Association of the College for Women gave a banquet to the graduating class.

Prize Speaking.

The same evening occurred the speaking of orations by members of the Sophomore and Junior Classes of Adelbert College in Beckwith Church. The speakers were as follows:

From the Junior Class: Julian Woodworth Tyler, "The Ascent of Man;" Arthur William Davidson, "Government by Injunction;" James Vaclav Kakes, "Educational Forces in America;" Wallace Martin Swift, "Altruism in Politics."

From the Sophomore Class: Delo Emerson Mook, "The Mission of America;" Samuel Kramer, "Party Ties and Political Slavery;" George Albert

Palda, "Patriotism;" Max Joseph Farber, "International Arbitration."

The first prize of $50, to a member of the Sophomore Class, was awarded to Delo Emerson Mook; the first prize of $50, to a member of the Junior Class, was awarded to Wallace Martin Swift; and the second prize, irrespective of class, to Samuel Kramer.

At nine o'clock a Reunion of Social and Literary Organizations of Adelbert College was held.

Wednesday morning at ten o'clock a meeting of the Board of Trustees was held at Adelbert College.

The University Commencement.

On Wednesday morning occurred the Second University Commencement. It was the Seventy-Second Commencement of Adelbert College, the Sixth Commencement of the Graduate School, and the Fourth Commencement of the Law School of Western Reserve University. The Medical College, the Dental College, and the College for Women had already held their Commencements, but members of their Faculties and Student bodies were present. A large number of the trustees, members of faculties, alumni and students, assembled at Adelbert College and marched to Beckwith Church where the exercises were held.

The address entitled, "The Profession of the Teacher," was delivered by Professor George H. Palmer of Harvard University.

After the address, degrees were conferred upon the graduates of the different departments. The

honorary degree of L.H.D. was conferred upon Mr. Talcott Williams of Philadelphia and Professor Palmer, and the degree of D.D., upon the Rev. Charles P. Fagnani of Union Theological Seminary.

At the close of the commencement exercises a procession was formed and marched to the Adelbert College Chapel, where the Alumni lunch was served. The President of the Association, Rev. A. C. Ludlow, presided. The speakers were: President Thwing for the University; Professor Palmer of Harvard; Dr. A. G. Hart for the class of 1840; Rev. F. W. Taylor for the class of 1873; Rev. E. P. Cleaveland for the class of 1878; Dr. H. B. Herrick for the class of 1888; Miss Bentley for the class of 1898 of the College for Women; and Mr. H. A. Haring for the class of 1898 of Adelbert College.

At eight o'clock in the evening the University Reception was held at Clark Hall and Guilford House.

Phi Beta Kappa.

The Alpha Chapter of Ohio held its annual meeting in the Latin room of Adelbert College at 4 p. m. The president, Rev. T. Y. Gardner, was in the chair.

The following men were elected to membership in the society. From the class of '98, Allan H. Carpenter, Frank Meyer, Homer D. Rankin, Arthur H. Davidson, Nathaniel M. Jones, Roscoe M. Packard, Dudley L. Smith.

The following officers were elected for the ensuing year: President, C. J. Smith, '70; Vice-President, G. A. Wright, '87; Secretary, E. S. Meyer, '93; Treasurer, John Dickerman, '91.

It was voted that hereafter the number of initiates should not exceed one-fourth of the class at its graduation.

It was decided to have a *Φ. B. K.* supper in connection with the next business meeting of the Society, and Messrs. W. E. Cushing, A. C. Ludlow and E. S. Meyer were appointed a committee to take charge of the matter.

DEGREES.

The president conferred the honorary degrees in the following words:

Georgius Herbertus Palmer, vir ingeniosus et eruditus, philosophiae studio deditus, multos juvenes praeceptis suis ad virtutem erudivit. Idem Homeri carminibus optime in linguam vernaculam redditis insignem laudem meritus est. His de causis gradu amplissimo Literarum Humaniorum Doctoris adornatur.

Talcott Williams de patria et de urbe sua bene meritus est, quippe qui acta diurna optime conscripta in publicum ediderit, de juventute educanda curam habuerit, omnibus boni civis officiis functus sit. Merito igitur gradu amplissimo Literarum Humaniorum Doctoris ornatur.

Carolus P. Fagnani, ipse in literis sacris acriter et diligenter versatus multos juvenes de libris sacris docuit et ad alios docendos erudivit. Quibus de causis dignus est qui gradu amplissimo Divinitatis Doctoris ornetur.

Degrees were conferred by Adelbert College of Western Reserve University upon the following persons:

The Degree of Bachelor of Arts upon Henry Raymond Brush, Allen Harmon Carpenter (*magna cum laude*), Addison Bertram Clifford, George Chapman Dissette, Harry Albert Haring, Chester Morgan Harris (*cum laude*), Arthur Dayton Hughes, Harvey William Hurlebaus (*magna cum laude*), William Raphael Kellogg, Milford Foster Lewis (*cum laude*), Hubert Alonzo Lane, Alfred Irving Ludlow (*cum laude*), Frank Meyer (*magna cum laude*), Paul Russell Pope (*magna cum laude*), George Miller Sampson, George Wheeler Shaw, Bret Harte Taylor, Edwin Cooper Vance, Charles Jessie Wehr (*cum laude*), John Lynn Yeagle.

The Degree of Bachelor of Letters upon John Kramer, Richard Edmund Metzger.

The Degree of Bachelor of Philosophy upon Arthur Lee Clermont, Henry Edgerton Freeman, William Edward Gunn, Maynard Hale Murch, Jr., Joseph Ray Peck, Homer Day Rankin (*magna cum laude*).

The Graduate School of Western Reserve University conferred the Degree of Master of Arts upon:

Arthur Holbrook Bill, A. B., Ethel Lynn Griste, B. L., Flora Belle Herr, A. B., Lulu Sterrett Machwart, B. S., Meta Wilhelmina Peters, A. B., Nina May Roberts, A. B., Stephen Douglas Sanor, B. S., Johann Wilhard Swanbeck, Swen Emil Swanbeck, William Jackson Truesdale, A. B., Frederic Marcus Wood, A. B.

The Franklin T. Backus Law School of Western Reserve University conferred the Degree of Bachelor of Laws upon:

Carlos Delos Ainger, Constant Joseph Benkoski, John L. Cannon, Abraham Cramer, Harry James Crawford, A. B., George David Ingram, Victor Charles Lynch, Ph. B., Albert Robert Manning, Alex. Hamilton Martin, B. L., William Orin Mathews, Tom F. Quigley, William John Shaw, Charles Lincoln Stocker, A. B., Aaron Burt Strimple, Wayne Bidwell Wheeler, A. B., Wm. Judd Starkweather, Jr., A. B.

Honors and prizes were given by Adelbert College of Western Reserve University to the following persons:

Commencement Honors: First Honor, Paul Russel Pope; Second Honor, Harvey William Hurlebaus; Third Honor, Harry Albert Haring; Fourth Honor, William Edward Gunn.

Junior Honors; Equal Scholarship Honors to Arthur William Davidson, Nathaniel Moore Jones, Jr., Roscoe Milliken Packard, Dudley Lytton Smith.

The Two Year Honor in German to Samuel Kamer.

The Two Year Honor in Greek to Charles Wesley Thomas.

President's Prizes for the highest records for the Freshman Year in:

French and German (Modern Language Course), John William Osborn; German (Classical and Latin Scientific Courses), Alfred Noah Kellogg; Greek, Louis Bryant Tuckerman, Jr.; Latin, First Prize, Stanley Leman Galpin; Second Prize, Louis Bryant Tuckerman, Jr.; Mathematics, First Prize, William

Massey Carruth; Second Prize, Carroll Adelbert Peabody; Gymnasium, Roland Martin Jones.

The Handy Philosophical Prizes, First Prize, William Edward Gunn; Second Prize, Homer Day Rankin.

Harriet Pelton Perkins Scholarship, Arthur William Davidson.

The Early English Text Society's Prize for the best examination in early English, Henry Raymond Brush.

The Shakspere Society's Prize for the best examination in Shakspere, Julian Woodworth Tyler

The following degrees had been previously conferred by Western Reserve University:

On June 21st, the Degree of Bachelor of Arts upon Agnes Adams, Mary Lorenda Gibbons, Anna Louise MacIntyre, Emma Bentley Parks, Marian Warner Wildman, Grace Stone Zorbaugh.

On June 21st, the Degree of Bachelor of Letters upon Charlotte Marion Bush, Inez Maria Eccleston, Edith Bidelow Gates, Bona Ida Spenzer.

On June 21st, the Degree of Bachelor of Philosophy upon Ida Martha Austin, Isabel Kempton Bentley, Elsie May Brown, Louise Claflen, Bessie Davidson, Belle Maud Goldsmith, Sarah Gertrude Hadlow, Florence Mabel Tiffany, Maude Orton Truesdale.

On May 25th, the Degree of Doctor of Medicine upon Pearl A. Beebe, William A. Burns, Chester L. Carlisle, Henry Irving Cozad, Ph. B., Adolph Cudell, Clyde S. Culp, Emory L. Dial, A. B., Egbert S. Dickerson, William F. Doolittle, H. Melville Hall, Harrie E. Hard, Emil J. Heinig, Charles E. Held, Corwin T.

Hill, Willis S. Hobson, A. B., Gideon H. Hoffman, Charles M. Hole, Cyrus Jaster, V. Clyde Laughlin, J. Melvin Little, Ernest H. Lueke, William C. Manchester, B. L., Edwin C. McComb, Walter H. Merriam, Ph. B., M.D., Gustav H. Mitchell, John W. Norrel, William O. Osborn, M. D., William W. Phillips, A. B., Otho J. Powell, B. S., Edwin G. Rummel, Frederick J. Schmoldt, Edwin H. Season, John W. Seids, Walter G. Stern, B. L., Robert H. Sunkle, A. M., William J. Thomas, William H. Wood, William J. W. Woolgar.

On May 18th, the Degree of Doctor of Dental Surgery upon Fred Fayette Chapman, Foster Oran Dudgeon, Charles Surfestus Draime, Calvin Riley Edson, Charles Drawn Elder, Isidor Englander, Albert Carl Fisher, William Woods Gillen, Penrose Thomas Haight, George Eels Hervey, Thomas Bertell Johnson, Edward Raymond Kelley, Jay Carleton Kelley, Herman Clifford Kenyon, Percy Ellis Maddock, Frank R. Mathews, Joseph Worrell McDill, John Allen McGannon, Francis Joseph McGannon, Frank Edgar Noland, Everett Eugene Quirk, John Babcock Reeves, Oliver William Renkert, Edward Burton Rogers, James Frank Rybak, Park Eugene Sprague. Leon Clark Vincent, Ph. B., Robert Harrison Wallace.

THE LIBRARY REPORT.

Some of the additions to the library since the publication of the Bulletin for April are as follows:

In ENGLISH LITERATURE, Editions of the poetical works of Lovelace, Suckling, Carew, Sandys, Ellis, Parnell, Blake, Churchill, Prior, Young, Falconer, Collins, Giles Fletcher, Campion and John Taylor; many representative novels of the 17th and 18th centuries, as Beckford's Vathek, Walpole's Castle of Otranto, Paltock's Peter Wilkins, and the like. The publications of the Early English Text Society have been brought down to date by the purchase of the volumes covering the years 1887-1897.

In PHYSICS, Bacon—Opus Majus; Ebert—Magnetic Fields of Force; Houston and Kennelly—Electric Telegraphy; Steinmetz and Berg—Alternating Current Phenomena; Houston and Kennelly—Electricity in Electro-therapeutics; Glazebrook—Maxwell and Modern Physics; Ayrton—Practical Electricty; and Upton—Star Atlas.

In ROMAN ARCHAEOLOGY, Mau—Geschichte der decorativen Wandmälerei in Pompeii; Bernouilli—Die Römische Ikonographie; Babelon—Monnaies de la Republique Romaine; Jordan—Der Tempel der Vesta; Auer—Der Tempel der Vesta; Mayerhoefer—Geschichtlich-topographische Studien; Richter—Rekonstruktion der Römischen Rednerbühne; Imhoof—

Blumer—Portraitköpfe; Hülsen—Das Septizonium des Septimins Severus; Kiepert et Hülsen—Formae Urbis Romae Antiquae; Ruggiero—Dizionario di Antichitá Romane; Cichorius—Reliefs der Trajanssäule; Schneider—Das Alte Rom; Rossi—Piante Icnografiche; Thédenat—Le Forum Romain.

SPRING MEETINGS OF THE TRUSTEES.

The annual meeting of the University Board of Trustees was held May 16th.

Leave of absence for one year was granted to Professor Palmie.

The following appointments in the College for Women were made: W. H. Hulme, Ph. D., Associate Professor of English for two years; Mrs. Ellen H. Richards, Lecturer on Household Economies for one year; Stephen F. Weston, A. M., Associate Professor of Political and Social Science for one year; A. H. Thorndike, Ph. D., Instructor in English for two years; Miss Ellen Frankish, Instructor in Mathematics for one year, as substitute for Professor Palmie; Paul A. Scharff, Instructor in German and French for one year; Nathan P. Harrington, Ph. D., Instructor in Biology for one year.

At a meeting of this same board held June 21st, H. W. Gruener, Ph. D., was appointed Assistant Professor of Chemistry in the College for Women, and O. F. Tower, Ph. D., and E. L. Thorndike, Ph.D., Instructors in Chemistry and Pedagogy, respectively for one year, in the same college.

A meeting of the Trustees of Adelbert College was held on May 16th, and the following appointments were made:

John Dickerman, A. B., Instructor in Mathe-

matics for one year; H. W. Woodward, A.M., Instructor in Physics for one year; S. F. Weston, A.M., Associate Professor of Political and Social Science for one year; V. J. Emery, A. M., Instructor in Latin for one year; John W. Perrin, Ph. D., Haydn Professor of History.

The annual meeting of this Board was held on June 21st, when the following appointments were made:

Rev. A. B. Cristy, Instructor in Elocution for one year; G. C. Long, M. D., Director of the Gymnasium for one year; C. P. Bill, Ph. D., Instructor in Latin for one year; H. W. Gruener, Ph. D., and O. F. Tower, Ph. D., Instructors in Chemistry for one year.

NOTES.

The following Minute was adopted by the Trustees of the University and Adelbert College, on May 16th, in reference to the late Truman P. Handy.

This Board desires to place on record an expression of its love for the character, and its gratitude for the work of Mr. Truman P. Handy. With the exception of a brief interval, for more than thirty years, Mr. Handy had been a member of the Board of Trustees of the College or of the University. His name is borne by the Professorship of Philosophy in Adelbert College. For each of several years, he also gave the funds for the establishment of the Handy Philosophy Prizes. His generous thought for this institution, and his hearty regard for it, found a fitting exponent in the generosity of his hand. His beneficence for the institution began early, the first record of it being in 1843, and Adelbert College was remembered in his will. He brought to this service, as to every service, wisdom, strength, patience, enthusiasm and gentleness, as well as generosity. But above all his works and above all the individual elements of his manhood, we desire to record our love for his beautiful and holy character, and our gratitude that he was enabled to serve this institution, as he served every institution with which he was associated, with noble and rare fidelity.

Leave of absence for one year has been granted to Miss A. H. Palmie, Professor of Mathematics in the College for Women, and to Mr. V. J. Emery, Instructor in Latin in Adelbert College.

* * *

The fee for tuition in Adelbert College and the College for Women has been raised to $85.00.

* * *

Professor Whitman of Adelbert College was Vice President and Chairman of the Physics Section of the American Association for the Advancement of Science, at the annual meeting of the Association held in Boston in August.

* * *

Mr. Charles Hayward Barnwell, who has been appointed Instructor in English in Adelbert College, received the degree of A. B. from South Carolina College in 1887, and A. M. in 1888. From 1889 to 1892, he was Adjunct Professor of Modern Languages in the Agricultural and Mechanical College of Alabama; from 1892 to 1894, Shattuck Scholar in English at Harvard University, and from 1894 to 1897, Professor of English in Hollins' Institute, Virginia. In 1897 he returned to Harvard for further study, and received the degree of Ph. D. in 1898.

* * *

Mr. Clarence Powers Bill, appointed Instructor in

Latin in Adelbert College, graduated from Adelbert College in 1894, being valedictorian of his class; remained the next year at Adelbert studying Classical Philology, and received the degree of A. M. in 1895. Mr. Bill then entered the Graduate School of Harvard University, received the degree of A. M. in 1896, was Shattuck Scholar for 1896-97, Morgan Fellow for 1897-98, and received his Ph. D. in 1898.

* * *

Miss Ellen Huntington Frankish, who will act as substitute for Professor Palmie in Mathematics for Women for the current year, graduated from the University of Nebraska, as A. B. in 1897. During her Senior year, Miss Frankish acted as Undergraduate Instructor in Mathematics, and during the year, 1897-8, she was a scholar in Mathematics.

* * *

Mr. John William Perrin, appointed Haydn Professor of History in Adelbert College, received the degree of Ph. B. from Illinois Wesleyan University was assistant principal of the High School at Danville, Illinois, 1887-88, superintendent of schools in Petersburg 1888-89, and the next year, assistant superintendent of schools in Cook County, Illinois. In 1889 he received the degree of A. M. from Wabash College. From 1890 to 1892 Mr. Perrin was a graduate student in History at John Hopkins University, and the following year at Chicago from which Uni-

versity he received the degree of Ph. D. in 1895. From 1893 to 1895, he was Professor of History and Political Economy in the First Wisconsin State School, and from 1895, Professor of History and Politics in Allegheny College.

* * *

Mr. Paul Adrian Scharff, appointed Instructor in French and German in the College for Women, graduated from Princeton in 1885. He was appointed Boudinot Fellow and Instructor in French in Princeton for the year 1885-6, and received the degree of M. A. in 1886. He was a student at Jena 1886-87, and from that time has been a teacher of French and German in the following schools: St. John's, Manlins, New York; Portland Latin School, Portland, Me.; St. Paul's Cathedral School, Garden City, Long Island; Adelphi Academy, Philadelphia and Cheltenham Military Academy, Ogontz, Penn.

* * *

Mr. Ashley Horace Thorndike, appointed Instructor in English in the College for Women, graduated from Wesleyan University in 1893, and for the next two years was principal of Smith Academy, Hatfield, Mass. From 1895 to 1898, he was a student of English in the Graduate School of Harvard University, being a University Scholar 1896-97, and Shattuck Scholar 1897-98. He received the degree of A. M. in 1896 and Ph. D. in 1898. During these three years, Mr. Thorndike was also an instructor in Boston University.

Mr. Edward Lee Thorndike, appointed Instructor in Pedagogy in the University, graduated from Wesleyan University in 1895, and spent the next two years at Harvard, taking the degrees of A. B. in 1896, and A. M. in 1897. From 1897 to 1898 he was a Fellow in Psychology at Columbia, where he received the degree of Ph. D.

* * *

Mr. Ollin Freeman Tower, appointed Instructor in Chemistry in Adelbert College, graduated from Wesleyan University in 1892, received the degree of A. M. in 1893, and was assistant in Chemistry at Wesleyan 1893-94. In 1894-95 Mr. Tower was a student at Leipzig, where he received the degree of Ph. D. in 1895. From 1895 to 1898, Mr. Tower was assistant Chemist in the Nutrition Investigations of the United States' Department of Agriculture, and assistant in Cheimstry in Wesleyan University.

* * *

Mr. Nathan Russell Harrington, appointed Instructor in Biology in Adelbert College, graduated from Williams College in 1893. He was a graduate student at Columbia during the year, 1893-94, assistant in Biology at Williams College 1894-95, and received the degree of A. M. from that institution in 1895. Returning to Columbia, he was an assistant in Biology in 1896-97, and Fellow in Zoology 1897-98.

Mr. Harrington was the leader of an expedition sent out under the auspices of Columbia University

to the Nile Valley during the spring and summer just passed. The object of the expedition was to secure a very important and rather rare African fish—*Polypterus bichir*—which is supposed by many paleontologists to be like a large order of fossil fishes which gave rise to the Reptilia and higher vertebrates. The expedition brought back a large amount of very valuable zoological material.

* * *

During the summer the College for Women acquired possession of the plot of land between Clark Hall and Ford Place with a frontage of something over 200 feet on Bellflower Avenue.

* * *

The following statistics of students in the various departments of the University are of interest:

ADELBERT COLLEGE.

Additions to Upper Classes	3
Regular Freshmen	68
First Year Specials	3
Total No. of new students	74
Total No. in the College	187

COLLEGE FOR WOMEN.

Additions to Upper Classes	7
Regular Freshmen	58
First Year Specials	8
Total No. of new students	73
Total No. in the College	184

MEDICAL COLLEGE.

First Year Students	40
Total No. in the College (certain students not registered)	118

DENTAL COLLEGE.

First Year Students	36
Total No. in the College	99

The total number of students in the Graduate School is 25, in the Law School 100.

* * *

The new Biological Laboratory cannot be occupied for several months, and owing to changes now being made in the construction of the main building, it has been necessary to suspend laboratory instruction in Biology temporarily.

* * *

Professor Herrick has in preparation a Manual of Instruction in Elementary Biology.

* * *

Professor Weston is organizing in Cleveland and its vicinity, an Academy of Political Science which is to be affiliated with the Academy of Political Science of New York. The headquarters of this Academy are at Columbia University. A membership of tweny-five is necessary to constitute an Affiliated Society and a sufficient number has already been secured to insure success. The organization will be perfected during the present month.

LIST OF PUBLICATIONS.

The following is a list of publications between April 1, 1898, and October 1, 1898, by members of the faculties of Adelbert College and the University, so far as returns have been secured. The names are arranged alphabetically:

HENRY L. AMBLER, M. D., D. D. S.—*Dean of Dental School and Professor of Operative Dentistry and Hygiene.*

"Filling the Anterior Teeth of Children with Tin-foil." Paper before the Tri-union meeting of the Maryland State Dental Association. Published in the *Ohio Dental Journal*, June, 1898.

WILLIAM E. BRUNER, A. M., M. D.—*Clinical Assistant in Ophthalmology.*

"Amblyopia (Hysterical) in Children."—*Ophthalmic Record*, April, 1898.

HENRY PLATT CUSHING, M. S.—*Professor of Geology.*

"Report on the Geology of Clinton County, N. Y." —*Report of the State Geologist of New York*, 1895, vol. I, pp. 503-573, plates I-V.

HAROLD NORTH FOWLER, Ph. D.—*Professor of Greek.*

"Portraits of Virgil." A paper read at the Classical Conference at Ann Arbor, Michigan, March 31,

1898.—*Western Reserve University Bulletin*, April, 1898, pp. 28-37.

FRANCIS HOBART HERRICK, Ph. D., Sc.D.—*Professor of Biology.*

"The Protection of the Lobster Fishery." *Proceedings and Papers of the National Fishery Congress* (*Ext. from U. S. Fish Commission Bulletin* for 1897), Washington 1898, see pp. 217-224.

CHARLES FRANK HOOVER, A. B., M. D.—*Professor of Physical Diagnosis.*

"Remarks on the Technic of Percussion and the Value of Direct Percussion."—*Cleveland Journal of Medicine*, August, 1898.

"Gallop-Rhythm and Division of the Pulmonic Second Tone."—*Philadelphia Medical Journal*, August, 1898.

"Cardio-Pulmonary Murmurs."—*New York Medical Journal*, August, 1898.

WILLIAM HENRY HULME, Ph. D.—*Associate Professor of English.*

"An American Literature and the 'Great American Novel,"—*Western Reserve University Bulletin*, April, 1898.

"Malchus. An Old English text with Introduction."—*Journal of Germanic Philology*, Vol. I, pp. 431-441.

SAMUEL STOUGHTON POTWIN, D.D.—*Professor of the English Language and Literature.*

"Here and There in the Greek New Testament, with an Introduction on New Testament Exegesis." —12 mo. pp. 220. The Fleming H. Revell Co., Chicago, New York, Toronto. June, 1898.

W. A. V. PRICE, D. D. S., M. E.—*Lecturer on Electro-Therapeutics and Electro-Physics.*

"Foundation Principles of Cataphoresis."—*Items of Interest*, May, 1898. Reprinted in book form.

"The Electrolytic Products of Dental Medicines." —*Ohio Dental Journal*, June, 1898.

HUNTER ROBB, A. M., M. D. — *Professor of Gynecology.*

"Caesarean Section." "Symphysiotomy." "Immediate Repair of the Lacerated Outlet." "Retained and Adherent Placenta." "Induction of Abortion and Premature Labor." "Diagnosis of the Puerperal State." "The Puerperal State and Its Management." "Care of the New Born Infant." These papers written for a "*System of Obstetrics*," edited by Prof. Jewett of Brooklyn.

"The Opening of the New Lakeside Hospital."—*Cleveland Medical Gazette*, April, 1898.

"The Use of Salt Solution and Other Irrigating Fluids in Surgical Practice." Read before the Ohio State Medical Society at Columbus, May, 1898.—*The American Journal of Obstetrics and Diseases of Women and Children*, July, 1898.

"Skene's Treatise on the Diseases of Women." Review.—*Cleveland Medical Gazette*, June, 1898.

"Penrose's Gynæcology." Review.—*Cleveland Medical Gazette*, June, 1898.

"Infection after Abdominal Operations and its Treatment." Read before the Cleveland Medical Society June 10, 1898.—*Cleveland Journal of Medicine*, August, 1898.

CHARLES F. THWING, D. D., LL. D.—*President.*

"The Tendency Toward the Shortening of the Academic Year in Colleges." Educational Number of the *Independent*, August, 1898.

"A Better Training for Law and Medicine."—*Educational Review*, June, 1898.

"The Best Life." Booklet. T. Y. Crowell & Co. September.

FREDERICK MORRIS WARREN, Ph. D.—*Professor of Romance Languages.*

"Notes on the Mediaeval Romans d'Aventure."—*Modern Language Notes*, June, 1898.

STEPHEN F. WESTON, A. M.—*Associate Professor of Political and Social Science.*

"La Questione de Negri" de Gennario Mondani. A Review.—*Political Science Quarterly*, June, 1898.

FRANK P. WHITMAN, A. M.—*Professor of Physics.*

"The Flicker Photometer."—*Science*, July, 1898.

"The Beginnings of Laboratory Teaching in America."—*Science*, August, 1898.

W. T. HOWARD, M. D.—*Professor of Pathology*, and

J. M. INGERSOLL, A. M., M. D.—*Lecturer on Otology, Rhinology and Laryngology.*

"A Contribution to Our Knowledge of the Eteology of Inflammations of the Accessory Sinuses of the Nose."—*American Journal of the Medical Sciences*, May, 1898.

WILLIAM THOMAS CORLETT, M. D., L. R. C. P.—*Professor of Dermatology, Syphilology, and Genito-Urinary Diseases.*

"Leprosy in Cuba.—*Cleveland Medical Gazette*, May, 1898.

"The Vegetable Parasitic Diseases of the Skin." In *Bangs and Hardaway's American Text-Book of Genito-Urinary Diseases, Syphilis and Diseases of the Skin*, Philadelphia, 1898.

"Dermatitis Hiemalis with a consideration of its Pathology."—*Transactions of the Third International Congress of Dermatology*, London, 1898.

"Diseases of the Skin. Schamberg." Review.—*Cleveland Journal of Medicine*, September, 1898.

PUBLIC LECTURES AND PAPERS.

The following is a record of public lectures and of papers before learned societies, etc., delivered between April 1, 1898, and October 1, 1898, and not published before October 1, 1898.

(When the author's title or position has already been mentioned in the list of publications, it is not repeated in this list.)

H. AUSTIN AIKINS, Ph. D.—*Professor of Philosophy.*

"Some Laws of the Central Nervous System." A lecture to the teachers of East Liverpool, April 29, 1898.

WILLIAM THOMAS CORLETT.

"The Various Forms of Ringworm." Address before the American Medical Association, Denver, June, 1898.

"A Recurrent Bullous Eruption Limited to Certain Areas." Read before the American Dermatological Association, Princeton, June, 1898.

"Lymphangioma Circumscriptum, with Report of Two Cases." Read before the American Dermatological Association, Princeton, June, 1898.

WILLIAM G. EBERSOLE, M. D., D. D. S.—*Demonstrator in Dentistry.*

"Dental Advancement." Address before the Alumni of the Dental Department of the Western Reserve University, May, 1898.

"Are we as Dentists Doing Our Full Duty to Humanity and the Profession?" Paper before the Cleveland Dental Society, September, 1898.

ALEXANDER HADDEN, A. M.—*Professor of the Law of Crimes.*

"The Law of Ohio Relating to Criminal and Civil Liability of Physicians for Malpractice." A paper before the Medico-Legal Society, Cleveland, September, 1898.

CHARLES FRANK HOOVER.

"Heart Murmurs." A paper before the Buffalo Academy of Medicine, August, 1898.

EDWARD W. MORLEY, Ph. D., LL. D.—*Hurlbut Professor of Natural History and Chemistry.*

"On the Velocity of Light in a Magnetic Field. Report of an experiment made with the aid of a grant from the research fund of the American Association for the Advancement of Science. By Professors Edward W. Morley, Henry T. Eddy and Dayton C. Miller."

A paper before the American Association for the Advancement of Science, August, 1898.

W. A. V. PRICE.

"The Practical Application of Cataphoresis." Address before the University of Michigan Dental Society, April, 1898.

HUNTER ROBB.

"A Case of Endothelioma Lymphangiomatodes of the Cervix Uteri." Read before the American Gynæcological Society, Boston, May 25, 1898. To appear in the American Journal of the Medical Sciences, and in the Transactions of the American Gynæcological Society.

FRANK P. WHITMAN.

"Color-Vision." An address before Section B, American Association for the Advancement of Science, by the presiding officer of the section, at the Boston meeting, August, 1898.

"On the Relative Brightness of Pigments by Oblique Vision." Paper read before Section B, A. A. A. S., at the Boston meeting, August, 1898.

HARRY WILMOT WOODWARD, A. M.—*Instructor in Physics.*

"Heat Energy." Address before the Cleveland Society of Stationary Engineers, April, 1898.

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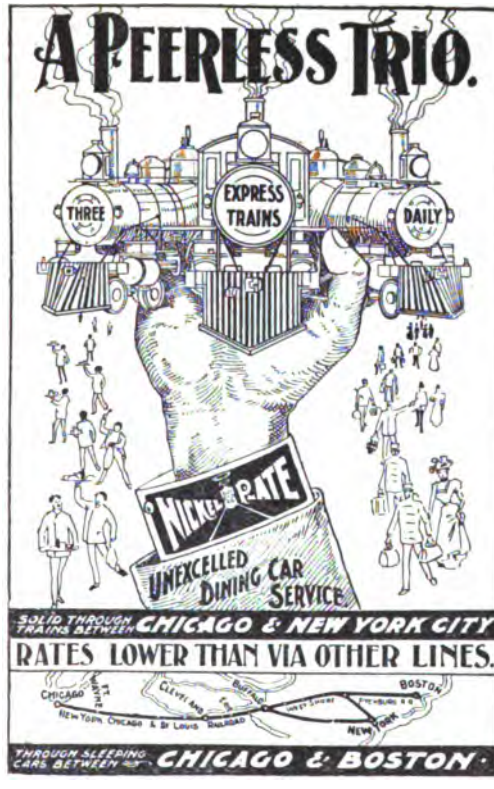

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